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THE BOSTON
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ORIGINAL ARTICLES

THE SIGNIFICANCE OF CONSTITUTIONAL FACTORS IN GENETIC RELATIONS OF THE PSYCHOSES*

BY ALBERT M. BARRETT, M.D.

THE historic progress of psychiatry, like that of other sciences, has been marked by phases in which new viewpoints developing out of some special line of investigation have for a time held current interest, and out of these have come results which have made new formulations necessary. These phases have left contributions that have added shape and strength to the structure of our psychiatric knowledge and have often led us deeper into the complexities that characterize the peculiarly difficult problems with which psychiatry deals.

At the present time an unusual interest is being shown in the investigation of the etiological relations of factors that are inherent in the constitution of the individual qualities that have generally been discussed as endogenous factors, in the production of the psychoses and their disposing or pathoplastic influence in the shaping of a psychosis not directly endogenous in origin.

It has long been appreciated that in any etiological relationship one must consider not only the external factors but also the quality of the individual on whom these factors exert their effects. In spite of this recognition there has continued a vagueness in conceptions of what endogenous qualities were to be distinguished as of importance, and difficulties continue in separating these among the complex interrelations that exist in the structure and functioning of the personality. .

Within recent years the subject of endogenous relations in the psychoses has been more precisely formulated in various contributions to the literature dealing with the constitution of the personality, as this is expressed in psychopathological states and ways of reacting that are characteristic of the normal average, and the correlation of these qualities with the anatomic structure and physiologic functioning of the individual. The most noteworthy and stimulating contributions along this line are those of Kretschmer[1], on body structure, temperament and character in relation with the psychoses, and the genetic studies of Rüdin[2], Hoffman[3], and Kahn[4], who have brought into their genetic investigations wider biologic aspects than has been done heretofore.

New viewpoints require proof, and gain in their soundness and practical application as clinical experience tends to corroborate these. It is to this end that we have in our clinic at Ann Arbor, during the past two years, interested ourselves in studies of some of the morphologic and physiologic qualities of those who have psychoses of the endogenous type and the relation of these qualities in the genetic course of the psychoses.

In the analysis of the psychic structure of the personality one finds as a fundamental factor in the determination of its structure the qualitative and quantitative aspects of its temperament. What is meant by the term temperament is difficult to formulate apart from its observable effects. It is recognizable as a definite force in the psychic functioning. It, as Kretschmer states, "gives the feeling tone and works in accelerating and inhibiting ways, in the driving mechanism of the psychic apparatus. It has influence on psychic qualities in determining the sensitiveness or lack of sensitiveness to external stimuli. It gives color to the mood, and determines the pleasant or unpleasant quality of the psychic content. It acts on the psychomotility, determining the general type of action as well as the special character of the movement. It has its physical correlations in the brain-endocrine gland interrelations and it seems to be conditioned by the hormonic and chemical qualities of the blood."

It thus is a fundamental force in determining the psychic-qualities and ways of reacting to the experiences of life, and in shaping the character into specific ways that determine the mental attitude and outlook on life and the direction of behavior. In pathologic ways it shapes the character towards the development of psychotic reactions and is deeply rooted in the endogenous qualities of the personality. It is definitely a part of the constitution of the individual. By constitution, if we bring over

*Read before the Massachusetts Psychiatric Society, November 21, 1925.

into psychiatry the concept of this that exists in the biological sciences and in somatic medicine, there is implied, "The totality of the morphologic functional and evolutive characteristics of the organism so far as they are inherited or inheritable (Kahn)".

In this sense the anlage for a particular type of temperament is laid down in the germplasm and in this respect we are concerned with a fundamental relationship that one must deal with in genetic considerations. Different from temperament, but yet fundamentally in part a constitutional characteristic, is character. In its psycho-biological meaning one understands the character to be "the totality of all the reaction possibilities of an individual as they are determined by the feelings and volition that arise in the course of its life development (Kretschmer)". Thus character is determined by the hereditary anlage and the experiences met with in life as they are influenced by somatic-nervous factors, and by contacts with the environment. What we know at this time about the interrelation of temperament and character in the psychosis has come largely from studies of these aspects of the personality as they exist in the two great psychotic groups of the cyclothymia and schizophrenia. What has already been learned has opened to us vistas for thoughts that extend into other psychotic deviations of the personality and also into the functioning and adaptations of the human personality in average life relations.

If one studies the personality types in the groups of the cyclothymia and schizophrenia one finds that in each of these groups two quite different qualities of temperament and character tend to be distinguishable. These qualities are not only characteristics of the individual in his own ontogenetic development, but they seem to have a phylogenetic relation, in that similar qualities appear in members of the family stock in outstanding ways. These qualities show as characteristics in the symptoms and manifestations appearing in definite psychotic reactions, but they may also occur in other members of a family in varying degrees who do not develop a psychosis.

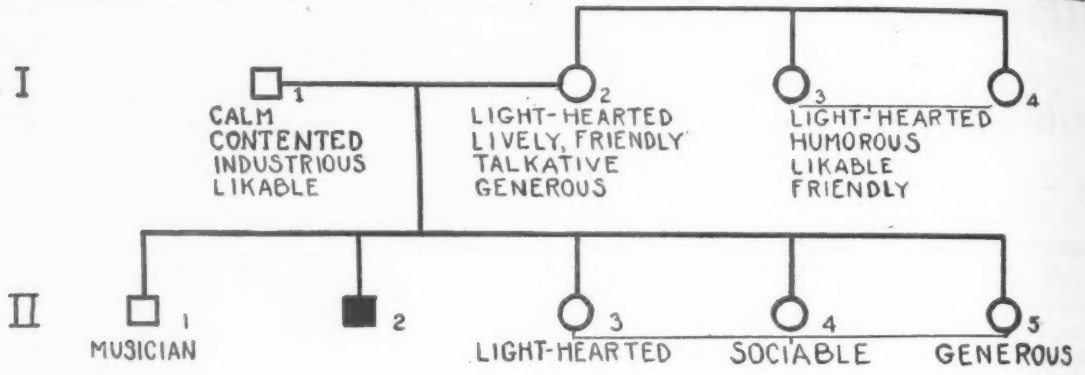

Fig. 1 (Kretschmer)

If we consider a family chart taken from Kretschmer of a cyclothymic family with one member II, 2, having a manic depressive phychosis, we see individuals some of whom show characteristic psychotic disorders of hypomanic type, while others have definite light, and euphoric affective qualities. (Fig. 1) In these non-psychotic members occur qualities of friendliness, sociability, open-heartedness, qualities which Bleuler has described as syntonic. They are light-hearted, active and good mixers. While in this family hypomanic qualities predominate one finds other cyclothymic families in which depressive qualities predominate and others in

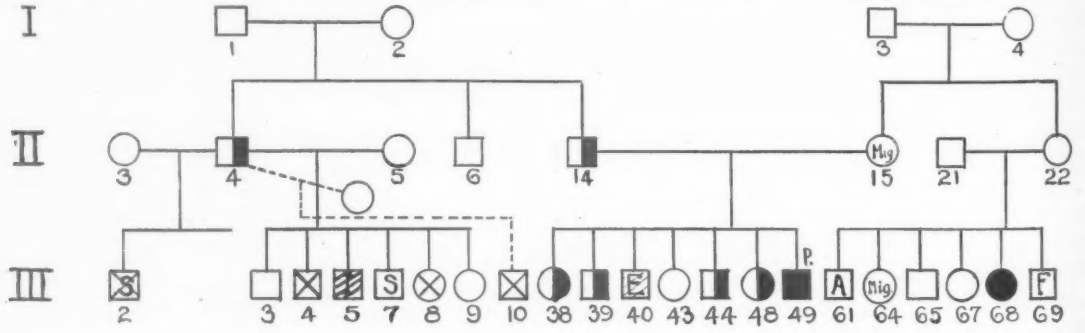

Fig. 2 (W.S.H. 8440)

which the temperaments vary between one or other poles of the cyclothymic reaction quality. Such characteristics are well known to us and are well recognized features of the manic depressive psychosis group. To this quality of temperament Kretschmer has given the name Cycloid. The shadings of the cycloid temperament vary in different members of the family from minor manifestations to degrees which justify one in designating an individual as a cycloid psychopath. The quality of temperament that dominates in this family is quite different from that observable in some families in which schizophrenia occurs. Such a family is illustrated in Fig. 2.*

In this family the Propositus, III-49, was in every way a classical case of schizophrenia. Other members of this family showed abnormal qualities of character and temperament which are quite different from those of the cycloid family. Instead of sociability and syntonic qualities we find individuals who are odd, eccentric, sensitive, having bad tempers, quarrelsome and seclusive. In general type they are characterized by differences in affective sensitiveness, varying between emotional sensitiveness and emotional coldness.

The oldest sister of Propositus, III-38, while not regarded as having a definite psychosis, was described as a scold, peculiar in her disposition, irritable and given to outbursts of temper. Diagnosis: schizoid personality. A brother, III-39, was regarded as an odd character, who lived a secluded life and was noted for his unreasonableness. Diagnosis: schizoid personality. A brother, III-40, was an epileptic with deterioration. A brother, III-44, was characterized as always reserved, distant, "one could not get acquainted with him." Diagnosis: schizoid personality. A sister, III-48, was a trouble-maker in the family. She was unreasonable, stubborn, suspicious and deceitful. Diagnosis: schizoid personality.

Not only were these abnormal qualities of character in the generation of the patient, but qualities of a similar sort were present in the father and members of his family. The father, II-14, was described as being an odd character, strict in his ideas, quick tempered, suppressed in his feelings and excessively religious. Diagnosis: schizoid personality. Two of the father's brothers were of abnormal personality. One, II-4, was an odd irascible seclusive type, with changing moods towards his family. The other brother was severely alcoholic. The schizoid brother, II-4, married three times and from each of these matings there were abnormal descendants. A son by the first marriage committed suicide after being in trouble with his family. By the second marriage there were six descendants, two of whom were of abnormal character, but not classifiable from the information available as definitely schizoid. One other suffered from a psychosis, the nature of which cannot be definitely determined, and another brother committed suicide. We observe in this family an exceptional amount of mental abnormalities, but what is of interest to us is the similarity of the temperament and character of its members. The similarity of these qualities of temperament and character with the mental qualities occurring in prae-psychotic and in the residual stages of schizophrenia, and their resemblance to the mentality present during the acute phases of this disorder has led to their designation by Kretschmer as schizoid qualities. In milder degrees they are characteristics of the temperament and character of many average individuals; in their more pronounced manifestations they mark the individual as a schizoid psycopath. Schizoid character qualities are determined intimately by the temperament in its interaction with life's experiences. The peculiar quality of the schizoid temperament lies in its emotional qualities. These may at one pole be those of extreme sensitiveness and at the other emotional coldness. Between these two poles are varying shadings. The schizoid psychopath may be irritable, suspicious, sensitive, shy, seclusive, or emotionally cold and unresponsive. These qualities we are familiar with in the prae-psychotic phases of many of our schizophrenic patients. They are qualities contrasting strongly with those of the cycloid temperament. Kretschmer has characterized the differences between cycloid and schizoid in his comment, "that cycloid personalities are simple, uncomplicated natures whose ways of feeling are direct, natural and undisguised on the surface, so that in general they are correctly judged by everyone. Schizoid personalities have a surface and depth. They wear a mask and one must get behind this to understand them."

Such qualities seem to be definitely fixed in the constitution of the individual. Their occurrence in families of schizophrenic individuals has led to their study as genetic factors in the production of schizophrenia. If one studies the heredity course of schizophrenia, one finds that in only rare instances is there an inheritance in the direct line, and that the more frequent finding is that of a high frequency of abnormalities in the collateral and indirect lines. The seemingly well demonstrated recessive Mendelian course that holds in the heredity of schizophrenia has led to the belief of the importance of these abnormalities as possibly representing heterozygote manifestations of the factors that are transmitted in the heredity of this disorder. In our modern conceptions of heredity one finds that one must give consideration to these personalities who while not psychotic are as Kretschmer says, "the incidents that give meaning to

*For the genetic records of Families shown in Figs. 2, 4, 5, and 6, we are indebted to the Warren Pennsylvania State Hospital.

the hereditary chart". Only by doing this can one understand the full significance of the genetic relations of the psychoses.

In the present state of our knowledge we are far from being able to circumscribe all abnormal qualities of the temperament and character within the two groups of schizoid and cycloid.

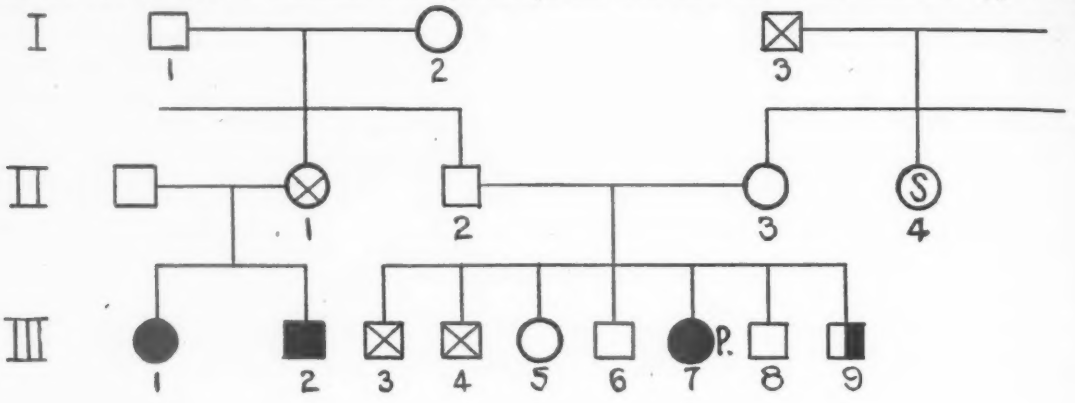

Fig. 3 (S.P.H. 4239)

There may well be other types which may be differentiated as one further analyzes the constitutional factors involved in the structure of the personality. Our own studies on schizophrenic families have tended to corroborate these viewpoints we have been discussing, and have shown leads and trends that have had a practical clinical application in the diagnostic work of the clinic. While families showing the amount of abnormality that was present in the one we have discussed are exceptional, we have found few families in which psychoses were present among relatives where there were not also present abnormalities of character among some of its members that seemed to have some genetic significance in etiological determination. From a large series of these families we have selected a few for discussion that show these interrelations in various ways.

In Family S. P. H. 4239, the Proposita, III-7, was a hospital patient who was definitely schizophrenic with auditory hallucinations, paranoid mental content and moderate emotional deterioration. Of her six siblings the oldest, III-3, was of abnormal character: he never employed himself usefully and was regarded by those who knew him as a harmless, seclusive type of man. The second brother was noted as being queer, and much like his older brother. The youngest brother, III-9, was odd and eccentric. He lived by himself, never went out and was of irascible moods. Diagnosis: schizoid personality. The parents of this group of descendants were not regarded as abnormal, but a sister of the father was considered as odd and eccentric. Two of her

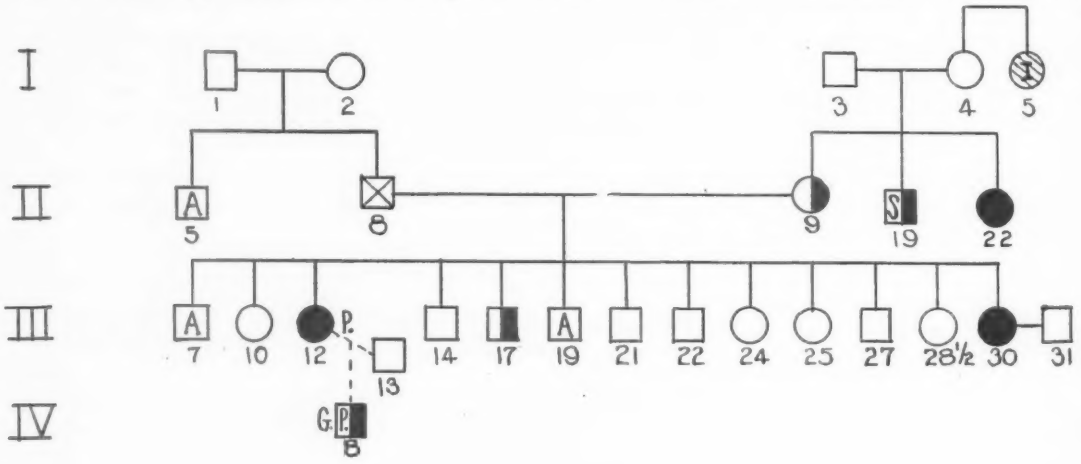

Fig. 4 (W.S.H. 8438)

children, III-1 and 2, were hospital cases of schizophrenia. A sister of the mother committed suicide and the father of the mother was known as an eccentric odd individual who was usually spoken of as "the fool".

In Family, W. S. H., 8438, Fig. 4 the Propositia, III-12, showed during her early life definite schizoid qualities. She was stubborn, irritable and could not adapt herself to the family life. At 40 she developed religious delusions, auditory hallucinations, and impulsive behavior. Diagnosis: schizophrenia.

Two of her brothers were severe alcoholics. Another brother, III-17, was irritable, hot-tempered, quarrelsome, and easily formed ideas of reference. Diagnosis: schizoid personality. A sister, III-30, during an uremic attack developed a delusional episode with auditory and visual hallucinations. The unclearness and excitement soon subsided, but left her with an incoherent thought, impulsive actions and progressing emotional deterioration. Diagnosis: schizophrenia.

The parents of this series of siblings were both of abnormal character. The father, II-8, was noted as being a great braggart, headstrong, and conceited, and often showed odd behavior. Diagnosis: abnormal character. His brother, II-5, was a severe alcoholic. The mother, II-9, was unsympathetic, emotionally cold and regarded by her family as an odd personality. Diagnosis: schizoid personality. The brother of the mother, II-19, was described as "one of the queerest of men," at times he was alcoholic and committed suicide following a quarrel with his wife. Diagnosis: schizoid personality. A sister, II-22, at the age of 40 developed delusions of persecution and auditory hallucinations and ultimately progressed in an emotional deterioration. Diagnosis: schizophrenia.

The parents of the mother were regarded as average normal types, but a sister of the mother, I-5, had a psychosis about which we know little. It is of interest that an illegitimate child of the Proposita, IV-8, in early life showed definite schizoid qualities, of hypersensitiveness, suspicions, and moodiness, and held ideas of reference. In adult life he developed paresis which brought about his death.

In Family, W. S. H. 8368, the Propositus, IV-10, was an odd and unstable character in childhood. At 16 he became a wanderer from home. At the age of 30 he came into a hospital where he showed mannerisms, auditory hallucinations and emotional deterioration. Diagnosis: schizophrenia. The sister of this man was not regarded as abnormal, but his father, III-12, was an odd personality. He was described as moody, sulky, and of cross and ugly disposition. Diagnosis: schizoid personality. The mother was of subnormal intelligence, but was not regarded as of otherwise abnormal character. The parents of the mother were both abnormal. The father was an odd character, irritable and frequently in quarrels. Diagnosis: abnormal personality. His wife, II-4, was of low intelligence. At 48 she became excited, stubborn, and from then on progressed in an emotional deterioration. Diagnosis: schizophrenia. A sister of II-4, while not outwardly abnormal, had a schizophrenic child, III-36½.

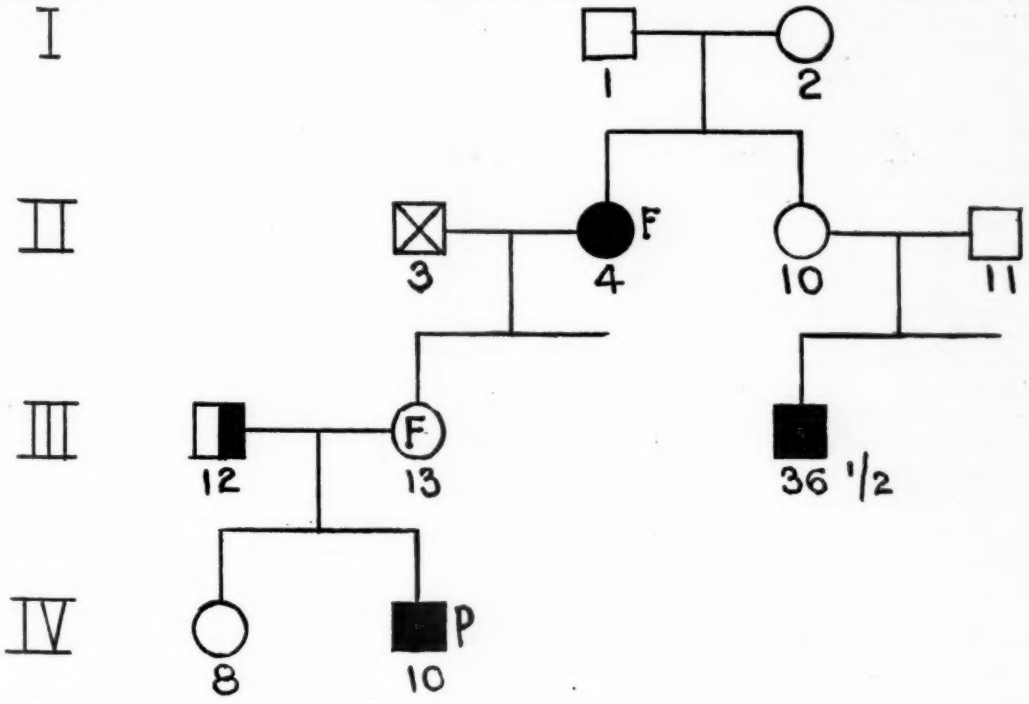

Fig. 5 (W.S.H. 8368)

When we consider these few families which are representative of many others in our series and of numerous others that have been discussed in the literature dealing with the genetics of schizophrenia, notably those of Rüdin, Hoffman and Kahn, we find in these apart from those who are psychotic, individuals who show abnormalities of temperament and character that

vary in degree from qualities possessed by many average individuals and others in whom these qualities are present to a degree that mark them as psychopathic personalities. In many of these the qualities correspond with what we have discussed as schizoid, in others we can do no more than classify the individual as an abnormal character. But all seem to be abnormalities of the emotional sensitiveness that determine varying degrees of social inadaptability and in their more pronounced manifestations are qualities which seem distinctly different from the abnormalities of temperament met with in cyclothymic families.

While we are far from knowing in our present state of information just how the abnormal qualities we have discussed in the conception of schizoid, are genetically in relation with schizophrenia, some viewpoints have been given to us, in particular those of Kahn and Hoffman, that seem to some extent borne out in clinical experience.

Schizophrenia is a process psychosis having a definite beginning and characteristic course and termination, and is thus much more than is embraced in the conception of schizoid as generally held at this time. Kahn suggests that in schizophrenia there are at least two anlagen present. One of these is the anlage to schizoid mental qualities and this is never absent in schizophrenia, and the other anlage which must be present to bring about schizophrenia is one that leads to the characteristic schizophrenic disintegration.

This viewpoint of bringing into genetic considerations fundamental constitutional qualities fixed in the germ plasm, rather than dealing only with definite psychoses, gives to us factors that are more elemental and circumscribed than have hitherto been available. Back of the phenotype psychoses lie genotypic factors that cannot be left out and as Kretschmer comments, "give meaning to the genealogical chart". In dealing with questions of polymorphous heredity one can no longer be limited to the interrelations of phenotypic psychoses alone in determining the genetic interrelations of different psychoses, and where different types of psychoses of endogenous etiology occur in family groups one must seek for their genetic sources in factors specifically related to the particular type.

In clinical experience one not infrequently observes cases of manic or depressed states that show symptoms and reactions that one regards as characteristic of schizophrenia. Or cases that in part of their course are more or less pure types of mania or depression, but ultimately terminate in a schizophrenic deterioration. In schizophrenia one is familiar with clinical courses that show in addition to the characteristic schizophrenic symptoms, qualities of a cycloid character. The most frequent of these are the periodic and circular forms of catatonia. In the phenotypes of both of these atypical clinical states one finds the influence of genotypic factors coming from other members of the antecedents. There are also known cases that first run a circular course and later terminate in a schizophrenic deterioration. A phenomenon which Hoffman describes as a change of dominance. How these genotypic influences work can be seen in one of Hoffman's families. In this family the mother was a case of periodic depression, and the father a man of schizoid personality. His father was a case of schizophrenia. Of the four descendents two showed pure types of manic depressive psychosis, one was definitely schizoid and one had a psychosis that showed both cycloid and schizoid qualities.

The recognition that the germ plasm carries in it the anlagen to genotypic factors that show not only in psychotic manifestations but in abnormalties of temperament and character and that some of these abnormalities seem to appear as phenotypes of particular qualities such as schizoid and cycloid suggests that genotypic influences of these qualities may act as modifying factors in pathoplastic ways upon other psychoses than those with which they are usually associated. If this is so one may gain practical help in the interpretation of many atypical clinical pictures one meets with in psychiatric work. This question has been discussed in a number of contributions in the literature notably that by Binzwanger dealing with schizoid qualities in certain alcoholic psychoses and in the contribution of Kahn discussing the relation of schizoid qualities in relation with the cyclothymic psychoses. It is in this latter group that one can best demonstrate how genotypic influences of different qualities may combine or appear as dominant manifestations in families in which both cycloid and schizoid qualities exist in the parental anlagen. Such interrelation is shown in the following family. Fig. 6 (W. S. H. 8555).

In a generation of siblings there are two individuals, IV-11 and 13, whose psychosis ran the course of deteriorating schizophrenia. The oldest sister, IV-6, at the age of 36, had a period in which she was bothered by auditory and visual hallucinations, which she recognized as imaginary. She worried about this for sometime, but we know nothing of the further course. Diagnosis: psychotic episode possibly schizophrenia. The next sister was hypersensitive, held ideas of reference and showed an eccentric seclusive type of behavior. Diagnosis: schizoid personality. A brother IV-9, in early adult life complained of strange feelings in his body. He became depressed, self-centered, expressed delusions of persecution and had transitory hallucinations and illusions. He later in the hospital developed an acute excitement and died a week after his admission. The diagnosis of

this disorder is unclear. One sees in the course and symptoms reactions of both cycloid and schizophrenic qualities. A sister, IV-14, was of sullen disposition, talked but little, and was emotionally dull. Diagnosis: abnormal character.

We have in this generation two individuals with definite schizophrenic psychoses, and three others who showed characteristic abnormalities of temperament and character that one finds in schizophrenic families. Another member suffered from a psychosis, the diagnosis of which was unclear and showed both cycloid and schizophrenic qualities. The generation shows dominantly a schizoid strain.

In the parental lines we find two different psychotic phenotypes. The mother was a case of manic depressive psychosis and in her family there were many instances of psychoses of similar sort. The father was a peculiar type of individual who was moody, excitable, held ideas of reference, but never developed a definite psychosis. Diagnosis: abnormal character. His father while not himself abnormal had a brother, II-1, who, while showing no abnormality himself, had a granddaughter, IV-2, who was schizophrenic. A second brother, III-4, was not noted as being abnormal, but he had a daughter who was a schizoid personality.

The genetic interrelations in this family show the necessity in considering the question of polymorphous heredity, of taking into account factors other than those dominant in the parent, and that both parental lines must be considered. One would not have been warranted in concluding from this family, that as the mother of the patient had a manic depressive psychosis and came from a cyclothymic family, that this was an instance of polymorphous or dissimilar heredity course. One cannot ignore the influence of the schizophrenic qualities which existed in the paternal line.

As one considers the genetic interrelations that exist in the few families that have been discussed, it would seem that factors other than those appearing as specific phenotype psychoses must be taken into account. These factors may be manifest in specific qualities of temperament and character, that have their source in the germ plasm which determines the structure of the constitution.

This viewpoint widens our conceptions of what is involved in the hereditary relations of the endogenous psychoses and specific qualities of personality and suggests possibilities for closer physiologic correlations among the mechanisms that determine psychiatric disorders.

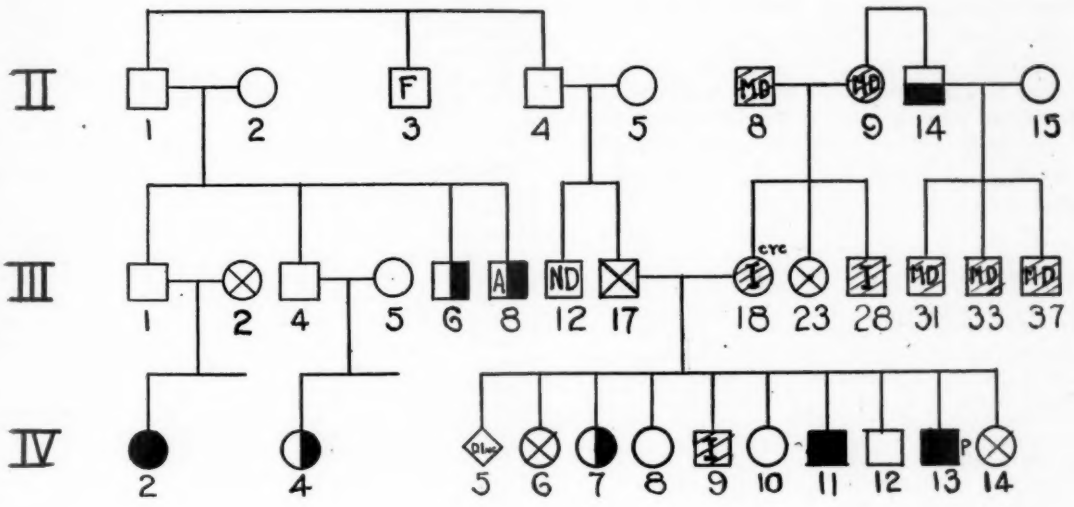

Fig. 6 (W.S.H. 8555)

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HYSTERICAL PARAPLEGIA: A CASE OF MANY YEARS' DURATION, RESPONDING WELL TO TREATMENT*

BY GEORGE P. REYNOLDS, M.D.

HYSTERICAL paralysis is not at all uncommon in practice, although not often diagnosed as such. Our war experience and the numerous reported cases show that, when recognized, it can be successfully treated. The treatment, as a rule, presents no great problem as, in the majority of cases, some adequate cause may be found for the hysteria, and the symptom relieved by a simple explanation of the situation, and by suggestion. These patients are, however, always of interest, and, in the following case, the paralysis was of such long duration, and the patient, through her lack of intelligence, her age, and her unstable temperament, was apparently so poor a subject for any form of mental therapeusis, that a report of the striking results obtained seems worth adding to the literature.

CASE REPORT

The patient, an obese American widow of 51, entered the Massachusetts General Hospital on the Surgical Service on November 9, 1924. She complained of increasing enlargement of the abdomen of four years' duration, accompanied by tenderness and occasional sharp pain in her left lower quadrant, the latter occurring at irregular intervals and lasting for from a few minutes to a half an hour. For the past few months this pain had come more frequently, and she had noticed that the left side of her abdomen was more prominent than the right. She also gave a history of complete paralysis of both legs following an injury to her spine *eleven years* before, but was very vague as to the exact nature of the injury, and no details were obtained at this time. A week before admission she had developed a "cold in the chest," and at the time of entry she was coughing considerably and raising moderate amounts of thick, tenacious sputum.

Physical examination showed râles at the bases of both lungs, with diffuse dulness, bronchial breathing, and slightly increased tactile fremitus. The temperature was 102° F., by rectum. The abdomen, which was markedly obese, showed a prominence of the left side, and an indefinite tumor mass was felt in the left lower quadrant. A motor and sensory paralysis of both legs was also noted. The rest of the physical examination was essentially negative. A diagnosis of bronchopneumonia, pressure paralysis of the cord, and "questionable abdominal tumor" was made. The patient made an uneventful recovery from her pneumonia, and was discharged to recuperate from this illness. The following note was made on discharge: "Patient's general condition makes any operative procedure inadvisable at this time. We cannot definitely make out any abdominal mass. Further observation, and detailed information in regard to the paralysis will be sought after convalescence from her pneumonia."

Three months later, February 25, 1925, she was readmitted to the Surgical Service of the Hospital. At this time the left side of the abdomen was found to be even more prominent than before. The entire abdomen was greatly distended, and was dull to percussion throughout, with the exception of the epigastrium and the right flank. A large pigmented, tender area was found just below the left costal border, which was thought to have been caused by the application of hot water bottles. A flaccid paralysis of the right leg was noted, all the reflexes being apparently absent. In the left leg, no voluntary motion could be elicited, and there was apparently no sensation, but it was thought that there was a faint suggestion of a knee jerk present. The examination of the lungs at this time was negative.

In view of her symptomatology and of the abdominal findings, an exploratory laparotomy was thought to be advisable. As soon as the patient was under ether, the tumor mass was observed to have largely disappeared. But, with the history of increasing enlargement over a period of four years, associated with sharp pain, and with the definite increase in the size of the abdomen during the interval between her first and second admissions, operation was felt to be still indicated. On opening the abdominal wall, the omentum was found to be thickly infiltrated with fat, but there was no evidence of abdominal tumor. She made an uneventful recovery from the operation, and has had no further abdominal symptoms.

The question of tumor having been disposed of, a neurological consultant was asked to see the case and investigate the paraplegia. He found that the knee jerks and ankle jerks on both sides were present, though markedly diminished, and observed a faint contraction of the quadriceps femoris when the patient was rolled over in bed. In view of these findings, a diagnosis of probable hysterical paraplegia was made, and the patient was transferred to the Neurological Service.

In going over her past history with the hope of finding some etiological factor for her condition, many conflicting statements were found. The patient's memory was impaired, and her story was quite unreliable. None of the authorities of the town in which she had always lived had known her prior to her injury, and their knowledge of her past was entirely hearsay evidence. The following brief summary is composed of such data as seemed to be reliable, or could be corroborated in some way: She was married, at the age of 13, to a boy of 18 who soon turned out to be a "good-for-nothing." She was obliged to take up dressmaking in order to support herself and him, as he soon used up all his money and made little attempt to earn more. He was, apparently, a drunkard and unfaithful. It is stated that she also drank a good deal at one time, but this statement has never been corroborated. At all events, she appears to have been fond of her husband, for she continued to support him, and nursed him through his last illness—tuberculosis—of which he died in 1908, 23 years after their marriage, and 16 years before her admission to this hospital. At the time of his death she was worn out from the mental and physical strain that she had been through, and had spent practically all of her savings. She says that she was "friendless, tired and hopeless" and that she never fully regained her strength after her husband's death. It has been said that she lived for the next three or four years with another man, but his identity and their exact relation are not known.

In any case, at the time of her injury, 11 years before admission, she was again tired out by her efforts to support herself (which she had apparently always done), friendless, and much depressed. She states that she also had to bear taunts and insults in public about her poverty and the disreputable life she was said to be leading, and that these preyed upon her mind a great deal.

*From the Neurological Department of the Massachusetts General Hospital.

One day, while particularly depressed, she slipped and fell down a few stone steps, landing against an iron railing, and hurting her back. Almost immediately after the fall her legs became numb, and she was unable to rise. She was carried home, and, on reaching her house, found that she was unable to move either leg from the hip down, and that she had lost all sensation in both lower extremities. She was incontinent of urine for a few weeks after the injury, but this soon cleared up. Her paraplegia, however, persisted, and since her fall she had been an inmate, first of a State infirmary, and later of a municipal almshouse. For eleven years prior to entry into this hospital she had been confined to her bed on account of her paralysis.

At the time of her transfer to the Neurological Service, a complete neurological examination was done, and was found to be entirely negative with the exception of the lower extremities. Here the tendon reflexes, as already noted, were all present, though markedly diminished. A slight contraction of the quadriceps femoris on turning the patient in bed was the only motor response that could be elicited in the thighs, and the lower extremities were apparently completely paralyzed.

She presented a "stocking" type of anesthesia, sensation being entirely absent in both legs up to a level about six inches below Poupart's ligament. The patient was allowed to watch a sterile needle inserted a half an inch into her calf and thigh, and stated that it produced no sensation whatsoever.

X-rays were taken of the spine and pelvis, which showed no evidence of abnormality in the relation of the vertebrae to one another, or of destruction of the joint spaces. The bones were unusually radiant, there being little contrast between them and the soft tissues. The findings were interpreted as being consistent with atrophy of disuse.

No attempt was made to use psychoanalysis, as it was felt that the patient had not sufficient intelligence to make such an investigation profitable. Instead, her knee jerks were demonstrated to the patient, and she was told that this phenomenon proved that the muscles and nerves were capable of response and that all that was necessary to cure them was some stimulus to "wake them up." After two or three days of reassurance she was given electrical stimulation of the affected members by the faradic current. During this treatment it was suggested to her that she could move her toes, and immediately she found that she was able to flex both great toes a half an inch or more. The current was immediately shut off and the patient returned to the ward, with the assurance that from that time on she would regain more and more motion each day, and would soon be able to walk. As she was naturally in a state of considerable excitement, she was left entirely alone for a few hours, at the end of which time examination showed that the tactile sense, before completely absent, had returned to a small area on the dorsum of each foot. It is interesting to note that pain and temperature perceptions were still absent.

The electrical treatment was repeated daily, under supervision, and with careful mental stimulation before and during the procedure. Progressive improvement was noted, motion returning to one group of muscles after another, and the area of normal sensation spreading up the legs until it was completely restored. Pain and temperature perceptions did not return as rapidly as did the tactile sense, but in a few days they were all normal. In five days she was able to move her knees, and, on the 18th day of electrical treatment, she was able to stand, bearing her whole weight, and taking a few short steps with assistance only in preventing the knees from bending. At this time the electrotherapy was discontinued and daily massage substituted.

Within six weeks of the beginning of treatment she was walking about the ward entirely without aid or supervision, and, at the end of two months, was discharged to a convalescent home. About the middle of her stay on the ward she contracted an upper respiratory infection, followed by a severe attack of bronchial asthma, which made it necessary for her to remain in bed for five days, but did not otherwise impede her progress. During the time she was learning to walk, she also suffered a good deal from minor complaints, such as back strain, joint and muscle pains in her legs, circulatory disturbances, and foot strain, as might be expected in any obese, elderly person who began to move about after years in bed. She bore these discomforts with considerable fortitude, and never gave any indication of a desire to give up trying to help cure herself.

After discharge from the hospital she was followed by the Social Service Department, and seen occasionally by the physician who had attended her on the ward. Efforts were made to find some occupation for her by which she could become self-supporting, but her eleven years of enforced idleness, in bed in a poorhouse, had so sapped her energy and ambition that she made little progress in actually increasing her earning capacity.

Six months after leaving the hospital the following note was added to her record: "November 30, 1925. Since discharge the patient has steadily improved, both mentally and physically. She seldom gets depressed, is much less excitable, and is able to work all day without nervous fatigue. She is boarding at a nursing home, walks a quarter of a mile uphill, alone, to an occupational therapy shop, where she works, cutting out toys, sewing, etc., from 9 A. M. to 4 P. M. She walks home alone at night, and often sews in the evening. She is earning a dollar a day at the shop, besides what little she makes by her sewing at home. She is, however, incapable of sustained or continuous work, and is prone to stop every few minutes unless supervised."

Unfortunately this daily routine was interrupted by the advent of winter, when the ice and cold weather made it impossible for her to get up hill to her work at the occupational therapy shop. She was given odd jobs to do in the nursing home, and continued to do plain sewing whenever orders could be found for her. This spring (1926), by the time the weather was mild enough to permit her to return to work, the occupational therapy shop had gone out of existence, and so, since December, 1925, she has had no regular employment.

During the period since her discharge, she has had two attacks of asthma, and various minor organic disorders, certain of which (hemorrhoids, cystocele, and rectocele), at one time required surgical treatment, which was given at this Hospital without untoward incident. From a psychiatric point of view, however, her course has been quite satisfactory. On account of her unstable mental equilibrium, it has been necessary to give her encouragement and mental stimulation to keep her at work, but there has been no evidence of any return of her hysterical symptoms. Recently, however, she slipped and fell, bruising her left leg and arm rather severely, and, as the leg was painful when she walked, she became convinced that it was too weak to support her, and therefore went to bed for a few days. Five minutes' talk with her physician, however, served to convince her that she could bear her full weight on that leg as well as on the other, and, after being assisted about the room twice, she found that she could walk as well as ever.

At the time of writing, 13 months after she walked out of the Hospital, a decision was reached that it is unwise and impracticable to devote more time and money to further attempts to make her self-supporting. Lately she has been boarding at nursing homes at the expense of the town from which she originally came. She has frequently expressed a wish to go back to that town to live, and has recently announced

that she was determined to do so. Plans to stay in the almshouse for a week or two and then "find work in the town and become independent again," were expressed. As this is the first time since she has been under our observation that she has shown any initiative herself, and as economically it has become necessary to plan for her permanently, it has been decided to do exactly as she suggests, although little hope can be entertained that she will ever be able to entirely support herself.

DISCUSSION

As stated in the early part of this paper, the treatment of symptoms of hysteria is a comparatively simple matter, the majority yielding readily to suggestion. For example, Scott[1] in 1918 reported 10 cases of war hysteria, of a duration varying between 9 and 42 months, all of whom were relieved in a very short time by suggestion and electrical treatment alone. Symns[2] in the same year reported a somewhat larger series and stated that persuasion, suggestion and reëducation were the three important factors in therapeusis. He further added that the use of electricity and other mechanical means of indirect suggestion was rarely necessary. Other authors advocate complete psychoanalysis as the first step in treatment, but all agree that suggestion alone will relieve hysterical symptoms in a large proportion of cases.

In the case under discussion, however, there were several complicating factors which made the therapeusis somewhat more difficult, and are, therefore, worthy of mention. In the first place, while it may be justly stated that no person who has developed hysteria may be regarded as having had a normal mental equipment prior to the appearance of symptoms, it would seem from this patient's history, and from her evident low grade of intelligence, not only that her personality was fertile soil for an hysteria, but that hers was the type of case that would be least likely to respond to treatment. Certainly one would be less sanguine in undertaking to treat an individual of this type than, for example, a robust young man who had been able to deal adequately with the ordinary difficulties of civil life, but who developed an hysterical paralysis under the extreme mental strain of active service on the battle front.

Then, again, the patient's impaired memory, her lack of intelligence, and the inadequacy of the history obtainable precluded us from determining the exact primary cause of her hysteria, and from any benefit that might have been derived from an explanation of the situation to the patient herself. It is interesting in this connection to note that she has never exhibited the slightest curiosity as to the nature of her paralysis and its cure, nor has she ever inquired as to what was done at the time of her abdominal operation.

Furthermore, the prolonged period of almost complete mental and physical inactivity, while confined to her bed in an almshouse, together with her marked obesity and her age, made convalescence, after function had been restored, a very complex problem. At the beginning of her treatment, an attempt was made to induce her to move her legs by suggestion alone, and it was not until this had failed that we felt justified in resorting to electrotherapy. Later, baking and massage was substituted because it was felt that this would not only serve equally well as a mental stimulant, but would also aid in developing the tone of the muscles that had been so long inactive, and in improving their circulation.

As soon as motion had begun to return to her limbs, and she became thoroughly convinced that she would soon be able to walk, she concluded that the physician who was effecting this "cure" must be Christ returned to earth, and although this idea was soon dispelled, a transference had become more or less firmly established before the patient was able to get about unaided. At no time did she show any lack of interest in her improvement, but, as time went on, her desire to get well came to depend more on her wish to please her physician and less upon any thought of benefit to herself. Moreover, having been dependent on others for so many years, and having been very inactive mentally, as well as physically, during that period, it was but natural that she should turn to her physician for advice, encouragement, and initiative at this time. The result was that he was obliged to sow the seed of every new idea that was to come to her, and to stimulate her to each new mental and physical effort that she was to undertake; in short, during the period of active treatment, it was necessary for him to "do all her thinking for her." In consequence of this, the patient soon became able to do many things in the presence of her doctor that she could not do alone, or when supervised by another individual. From the very first every effort was made to combat this tendency, and medical students, nurses and social workers were delegated to help her when necessary, to encourage her to try new movements with her legs, and, after she was walking, to sew and make beds without the orders or supervision of the physician in charge. These attempts were fairly successful, and she soon got so that, having once attempted a thing at her physician's suggestion, she would readily repeat it at the request of another, but she still continued to show little if any initiative. On one occasion only, when she had repeatedly refused to try to walk without his presence as a mental support, her physician was obliged to fall back on her desire to please him, and to request her to do it "for his sake." On the other hand, she frequently stated, when told to do something by anyone else, that she "would do it because her doctor would be pleased and for no other reason." By the time she was

ready for discharge, however, the number of persons from whom she would take suggestions had been sufficiently enlarged so that the transference to one individual was perceptibly weakened.

Since her discharge she has become still more independent. She has, of her own accord, saved enough money from her earnings to buy some of her clothes, and has begun to initiate ideas of her own to a certain extent. Her recent determination to go back to her native town, and her plans for her future there, are, however, the first real evidences of mental emancipation that she has shown, and are, therefore, a source of some encouragement to those who have followed her case.

SUMMARY

A widow of 51, with a past history of much mental trauma, had had, for eleven years, a complete paraplegia of the hysterical type. No attempt was made at complete psychoanalysis, as the patient's low grade of intelligence made such an investigation seem inadvisable. She was, however, aided to walk by means of electrical stimulation and suggestion. At the time of the present report (thirteen months after discharge from the Hospital) she has shown no signs of a return of her paralysis, but has not proved herself capable of more than partial self-support. She has recently, however, shown a definite increase in mental independence in her decision to return to her native town and to seek work there. She still expects, and will be encouraged, to try to earn an independent livelihood.

CONCLUSIONS

This case would seem to show that hysterical paralysis of many years' duration, even in an individual beyond middle age and of poor mental endowment is amenable to treatment by suggestion. We feel that the patient, as an individual, has been greatly benefited. Whether we can accomplish her financial independence, and thus benefit society as a whole, is a question that has not yet been answered.

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A CLOCK FOR THE CARDIAC CLINIC*

BY ALBERT S. HYMAN, M.D.

With the increasing development of the special function tests utilizing the pulse rate, the need of an accurate timing device has made itself evident in most cardiac clinics. The usual timing equipment found in cardiac as well as in other clinics has consisted simply in a clock indicating the time in hours and minutes; sometimes a second hand is added, but too small to be seen readily.

Clinicians interested in the timing of the pulse rate have generally resorted to the use of wrist watches with large second hands or have employed special split-second chronometers for this purpose, both of which procedures have frequently resulted in making the examination more awkward and difficult. This is especially true in regard to the function tests made with the Wolffe "cardio-ergometer," where the pulse rate is recorded every 30 seconds for seven minutes, or in the Rehfisch breath-holding test, where the slowing of the pulse rate must be accurately known in 15-second intervals. To make either of these tests complete the services of two persons are usually required: that of the examiner and the assistant who records the figures.

In attempting to obtain a simple yet accurate method of producing small time intervals many chronographic instruments both in this country and abroad were investigated, but they all were either very complicated or expensive and not well adapted for clinical work, especially in a large and rather busy cardiac clinic. A special clock originally devised by Dr. Joseph B. De Lee of Chicago for use in his obstetrical service was finally selected; this instrument had

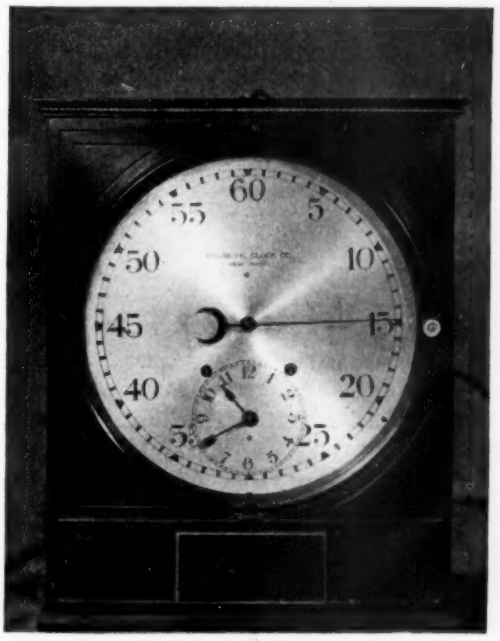

FIGURE 1

*From the Cardiac Clinic of the Witkin Foundation for the Study and Prevention of Heart Disease at the Beth David Hospital.

a large second hand which swept around a 12-inch dial and which could be easily seen 25 or 30 feet away. A smaller dial with a minute and hour hand was placed at the bottom of the second hand dial. (Figure 1.)

A timing device for use in a cardiac clinic must be audible as well as of sufficient size to be seen comfortably from all parts of the room. With the kindly co-operation of Mr. James Horath, electrical engineer of the Magnetic Clock Company of New York, a commutator bearing four contacts was added to the second hand gearing and a rather ingenious electric circuit was developed which caused a small bell to be rung every 15, 30, 45 or 60 seconds. It was soon found advantageous to add another bell of different tone to the circuit which was struck at the end of each minute. A small control switch permits the time interval to be changed at will. (Figure 2.)

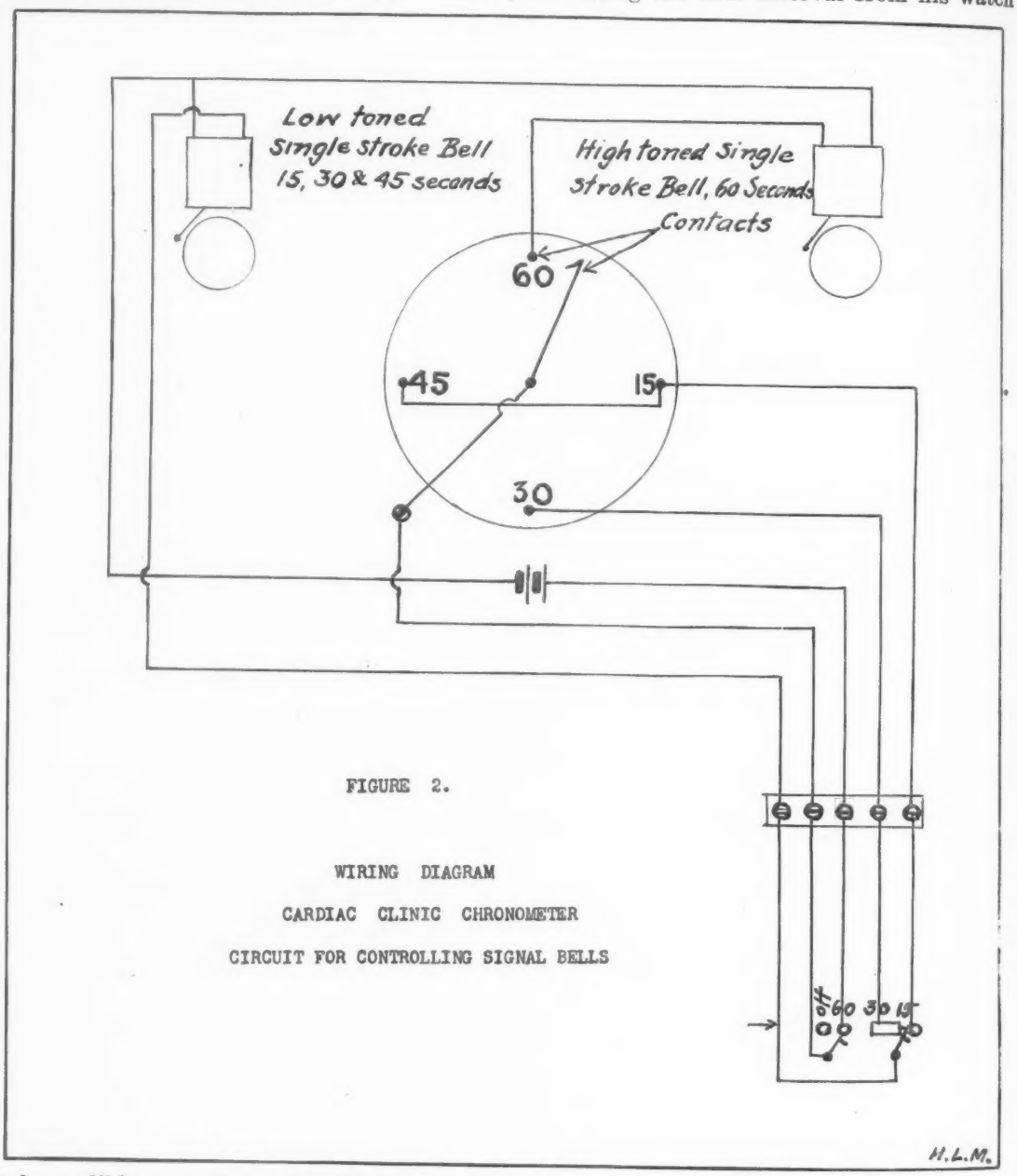

FIGURE 2.

WIRING DIAGRAM

CARDIAC CLINIC CHRONOMETER

CIRCUIT FOR CONTROLLING SIGNAL BELLS

This chronometer will permit all types of function tests requiring pulse rate records to be made with a minimum of personnel and effort. The sounding of the signal bells releases the examiner from the rigid concentration needed in calculating the time interval from his watch or split-second chronometer. One is given more opportunity to evaluate the quality of the heart sounds during the test in addition to obtaining the mere numerical factor of the heart rate.

This clock has been used for the past two years at the Cardiac Clinic of the Witkin Foundation for the Study and Prevention of Heart Disease at the Beth David Hospital in New York, and both my assistants and myself have felt that it is almost indispensable for routine cardiac function tests. In publishing this brief note we have had the thought that other cardiac clinics may perhaps be interested in this method of simplifying their function tests.

The Massachusetts Medical Society

THE CONTROL OF THE COMMUNICABLE DISEASES PREVALENT IN MASSACHUSETTS*

With a Study of the Mortality Due to Them During the Past Seventy-Five Years

BY EDWARD G. HUBER, M.D.

(Continued from page 673)

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16. The Typhoid Group

This group includes a number of diseases the respective causative organisms of which belong to the same biological classification, in which Bacillus typhosus is at one end, and Bacillus coli at the other. The most important members of the series are B. typhosus, B. paratyphosus A, and B. paratyphosus B. That there are other organisms in the group which cause infections and even epidemics is recognized. Recently Salthé and Krumwiede traced an epidemic of 59 cases to contamination of food with mouse feces which contained B. pestis caviae. These workers state that this organism, which is also known as B. typhi murium, together with B. cholera suis and B. enteritidis not infrequently cause diseases which may be classified in this group. All these diseases resemble each other more or less in several respects, namely,—clinically, in the biological characteristics of their causative organisms, and in measures necessary for control. They differ in that the immunity conferred by one member of the group does not protect against any other member. Clinically, paratyphoid fevers differ somewhat from typical typhoid fever, but on the other hand much of the typhoid now seen departs just as much from the classical type. The epidemiology of the partyphoids differs in one important respect from that of typhoid proper. In the latter, water has been the most important vehicle of transmission; in the former foods have taken that rôle, largely because some members of the paratyphoid B sub group produce diseases in animals which may be transmitted to human beings by means of insufficient cooking of pork, beef, and veal. Contamination may also take place by carriers who handle food, and in the case of these particular organisms meat is an especially good culture medium. These bacilli also occur in the intestines of healthy animals. Since this study is concerned with control measures the typhoid fevers will be considered as a group.

The typhoid fevers have existed since ancient times but Budd, in 1856, was probably the first to prove that the usual mode of transmission was through the contamination of water or milk with the feces of a typhoid patient. He also foresaw the rôle of carriers. In 1880 the bacillus was discovered; in 1896 the Widal test was demonstrated; in 1892 Sedgwick first suggested the rôle of flies in transmission. The splendid epidemiological study of typhoid fever during the Spanish-American War by Reed, Vaughan, and Shakspeare showed that very probably flies had transmitted most of the cases in the southern camps, but it remained for Hamilton to furnish conclusive proof of that probability in 1903. In 1896 and 1897 the paratyphoid organisms were discovered, and this family of organisms has gradually grown ever since.

As already inferred, an attack by one of the diseases of this group is thought to confer a considerable degree of immunity against the causative organisms, but not against any other, no matter how closely related. Immunity is obtained by vaccination with the respective organisms but probably is not of as long duration as that conferred by an attack. In either case, the immunity is not absolute, massive doses of infective material producing even fatal infections. The immunity conferred by vaccination has a duration, probably, of two or three years.

There has been a universal decline in the mortality rate from typhoid for the past half century, in fact every since Budd pointed out the importance of sewage contamination of drinking water as the chief etiological factor of the disease. This observation led to measures for obtaining pure drinking water, and to keeping it safe. Later when the bacillus was discovered and Budd's work received bacteriological confirmation, the necessity for protected water supplies became more evident than ever, and efforts in this direction were redoubled. In addition the patients themselves came to be regarded as foci of infection, and as a result contact infections were diminished. Consequently the typhoid fevers are no longer diseases of

*Published by the Committee on Public Health of the Massachusetts Medical Society.

crowded communities, but of rural regions. The urban rate has sharply declined while that for rural districts has had no such sensational drop. The report of the New York State Department of Health for 1914 shows this in graphic form, the curves having crossed so that the rural rate is now the higher. The present residuum of cases is due not so much to failure to provide pure water for communities, as to contact infections. The recent slight increase in typhoid morbidity in some of the large cities has attracted considerable attention and will no doubt result in a valuable epidemiological study of typhoid in relation to the shellfish industry.

Mortality from the enteric diseases—except the summer diarrhea of infants—has been recorded in Massachusetts in seven groups since 1849, as indicated:

1. *Typhoid*
   - 1849-1861 Fever typhus
   - 1862 Fever typhoid
   - 1863-1875 Typhus
   - 1876-1923 Typhoid
2. *Diarrhea*
   - 1849-1900 Diarrhea
   - 1901 Diarrhea and enteritis (2 years and over)
3. *Dysentery*
   - 1849-1920 Dysentery
   - 1921-1923 Dysentery (amebic, bacillary, and undetermined)
4. *Enteritis*
   - 1849-1854 Inflammation of bowels
   - 1855-1900 Enteritis
5. *Cholera*
   - 1849-1900 Cholera
   - 1901- Cholera nostras
6. *Fever Bilious*
   - 1849-1855 Fever bilious
7. *Fever*
   - 1849-1855 Fever

1. *The typhoid group*, so-called, has had a fairly uniform age and seasonal distribution, as shown in figures 67 and 68. Age 20-29 led with from 21 to 36% of the deaths in every five-year period except the last. Every peak except the last one was a sharp one; the highest one was in 1894-1898, although the one for the previous five-year period was only slightly lower. Age group 30-39 shows a gradual increase from 13% of the deaths in 1849-1853 to 22% in 1919-1922. Owing to this increase, and to the slight relative increase in deaths in the 15-19 and 10-14 groups, and to the fact that the age group 20-29 had only 20% of the deaths in 1919-1922—this being the lowest proportion for that age in any quinquennium—the peak was not so sharp in 1919-1922 and age group 30-39 shows the highest percent. This may be taken as a fairly typical age distribution of typhoid mortality. This does not mean a similar case distribution, for, as will be shown, the case fatality differs at different ages. Probably not all the cases reported under this group actually were typhoid, but undoubtedly more which really were typhoid or paratyphoid were not properly reported. Although the paratyphoids differ considerably from typhoid clinically, yet because of the similarity of the causative organisms and because the commonly used triple vaccine protects against the entire group, they are here included in the typhoid group discussion

TABLE 12

MASSACHUSETTS, 1849-1922

Number of Deaths Per Year Ascribed to Typhoid (column 2), *Rate Per 100M* (column 3), *Numbers of Deaths Ascribed to Other Enteric Diseases Which Probably Belong in the Typhoid Group* (columns 4-9), *Total of Columns 2 and 4-9* (column 10), *and the Probable True Typhoid Rate* (column 11).

Year	Typhoid	Rate	Diarrhea	Dysentery	Enteritis	Cholera	Fever Bilious	Fever	Total	Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1849	642	68.	28	180	44	—	20	141	1055	112.
1850	559	57.1	22	80	50	12	14	186	923	94.5
1851	732	72.5	17	103	44	9	22	185	1112	111.
1852	617	59.7	13	57	44	7	24	178	940	91.
1853	725	68.8	10	60	33	18	23	199	1068	101.3
1854	766	71.	15	70	33	—	22	140	1046	96.9
1855	770	69.8	16	50	36	9	22	142	1045	94.8
1856	960	84.3	21	46	38	8			1073	96.4
1857	1010	86.9	14	32	31	5			1092	94.
1858	901	75.9	9	35	33	8			986	83.3
1859	932	77.1	7	33	42	6			1020	84.3
1860	937	76.	11	17	48	12			1025	83.1
1861	989	78.8	14	23	30	5			1061	84.5
1862	1135	88.8	51	26	35	9			1256	98.3
1863	1442	110.8	195	87	34	15			1773	136.3
1864	1344	100.2	108	75	46	7			1580	119.4
1865	1694	125.8	72	92	42	7			1907	142.4
1866	1091	79.7	31	63	36	32			1253	91.6
1867	965	69.3	24	30	47	5			1071	76.9
1868	896	63.4	29	36	44	14			1019	72.1
1869	1205	83.8	18	25	39	11			1298	90.4
1870	1333	91.3	18	22	42	8			1423	97.5
1871	1116	74.7	22	14	56	12			1220	81.7
1872	1703	111.6	25	25	56	9			1818	119.
1873	1406	90.3	20	15	58	17			1516	97.3
1874	1147	72.1	14	11	56	12			1240	78.
1875	1059	65.2	15	25	45	12			1156	71.2
1876	881	53.2	11	22	50	11			975	59.5
1877	814	48.2	10	33	39	6			906	53.7
1878	679	39.5	12	31	30	8			760	44.3
1879	637	36.3	11	19	35	10			712	40.6
1880	882	49.3	13	19	42	11			967	54.2
1881	1072	58.5	10	16	42	9			1149	62.7
1882	1079	57.4	13	17	44	16			1169	62.3
1883	860	44.7	16	18	62	8			964	50.2
1884	875	44.4	10	10	49	8			952	48.4
1885	768	38.1	7	16	41	8			840	41.7
1886	800	38.9	8	14	31	9			862	41.7
1887	922	43.8	8	10	38	9			987	47.
1888	943	43.8	13	7	46	8			1017	47.3

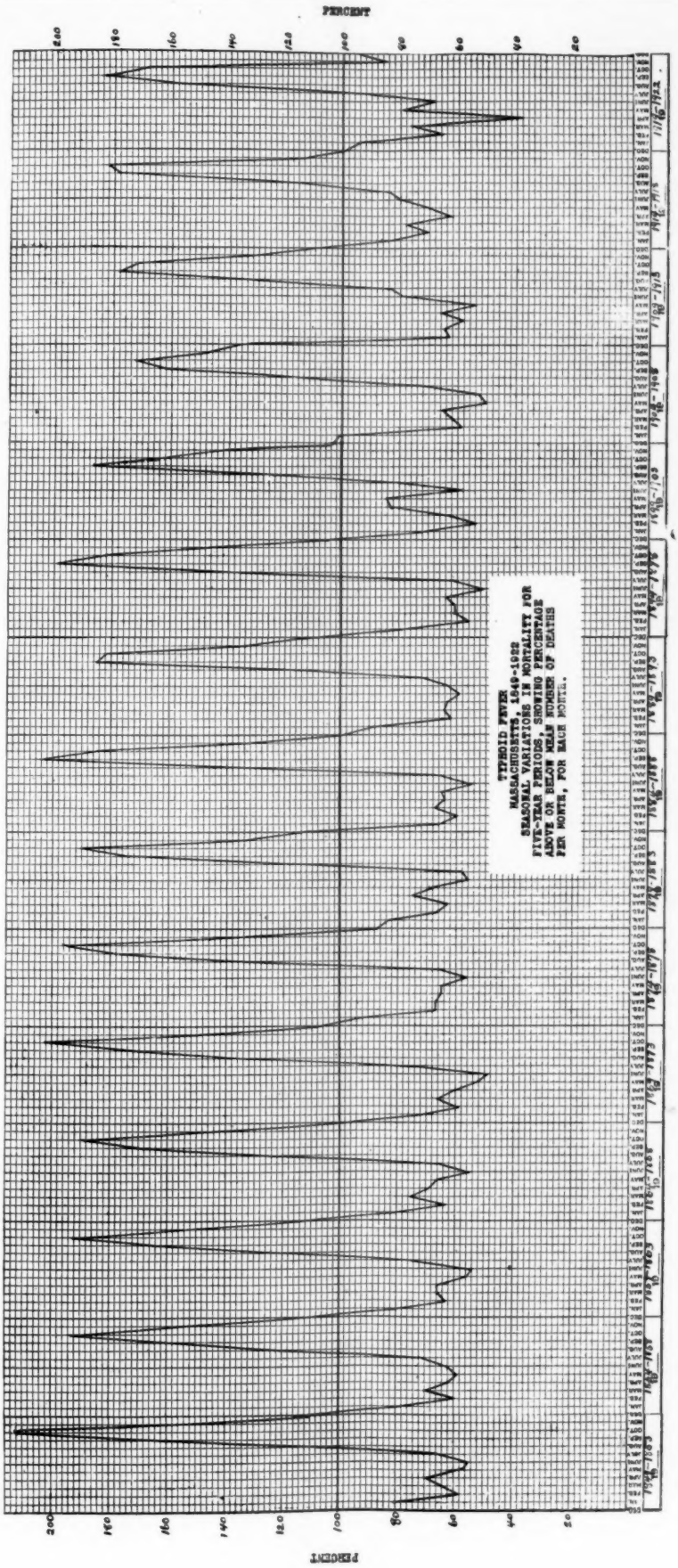
PERCENT
TYPHOID FEVER
MASSACHUSETTS, 1840-1922
SEASONAL VARIATIONS IN MORTALITY FOR FIVE-YEAR PERIODS, SHOWING PERCENTAGE ABOVE OR BELOW MEAN NUMBER OF DEATHS PER MONTH, FOR EACH MONTH.
PERCENT

FIGURE 67

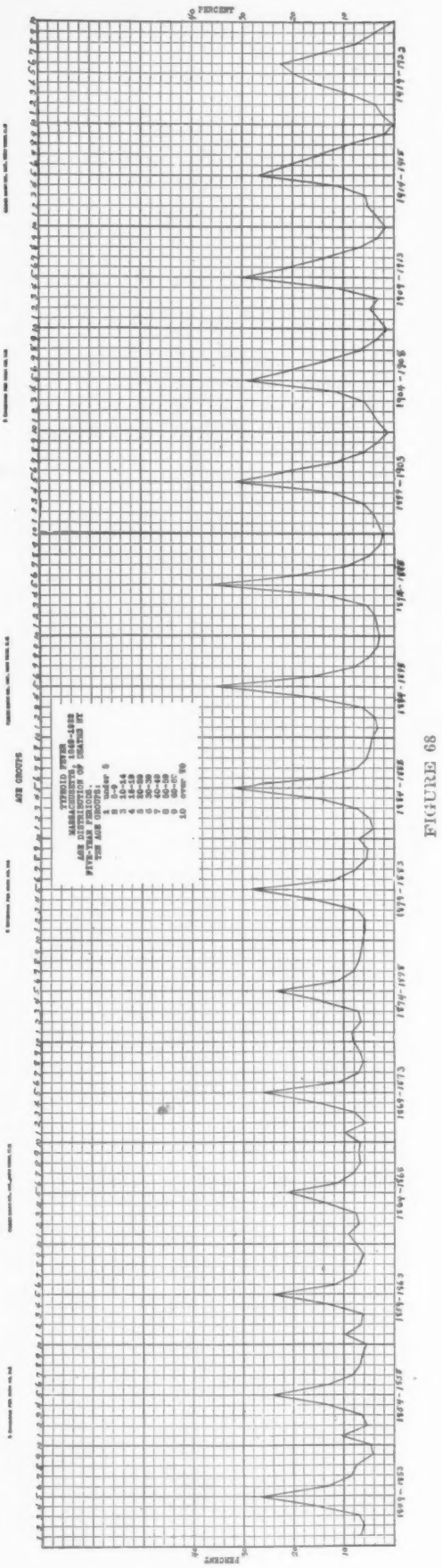

FIGURE 68

TABLE 12 (*Concluded*)

Year	Typhoid	Rate	Diarrhea	Dysentery	Enteritis	Cholera	Fever Bilious	Fever	Total	Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1889	891	40.6	6	16	40	10			963	43.7
1890	835	37.2	24	7	40	10			916	40.8
1891	821	35.7	18	10	48	10			907	39.5
1892	827	35.1	11	9	66	10			923	39.2
1893	750	31.	15	11	69	10			855	35.3
1894	748	30.3	14	9	70	11			852	34.4
1895	680	26.9	11	12	35	9			747	29.6
1896	723	28.	8	26	30	7			794	30.7
1897	607	23.	6	9	27	7			656	24.8
1898	663	24.6	7	21	16	7			714	26.5
1899	612	22.2	9	16	25	6			668	24.2
1900	632	22.5	7	12	28	9			688	24.5
1901	561	19.6	25	8					594	20.7
1902	538	18.4	26	9					573	19.6
1903	527	17.7	33	7					567	18.8
1904	463	15.3	22	5					490	16.1
1905	520	16.8	19	12					551	17.8
1906	477	15.1	30	6					513	16.3
1907	389	12.1	16	5					410	12.8
1908	517	15.8	20	9					546	16.7
1909	390	11.8	20	10					420	12.6
1910	411	12.2	31	6					448	13.3
1911	302	8.8	22	4					329	9.6
1912	269	7.7	25	4					298	8.6
1913	280	7.9	32	4					316	9.
1914	268	7.5	23	3					294	8.2
1915	246	6.8	20	3					269	7.4
1916	172	4.7	25	2					199	5.4
1917	178	4.8	34	2					214	5.7
1918	160	4.2	28	1					189	5.
1919	107	2.8	22	—					129	3.4
1920	95	2.5	22	2					119	3.1
1921	119	3.	11	1					131	3.3
1922	86	2.2	12	1					99	2.5
Total	55072		1635	1826	2185	494	147	1171	62617	

In seasonal distribution there is also a marked regularity. In nine periods the peak was in October. In the other six it was in September, with October not far behind. There has been a trend toward this latter distribution since 1884. There has always been a slight peak in March, April or May except in the period 1919-1922 at which time the lowest proportion of cases was recorded for April.

TABLE 13

PROPORTION OF MORTALITY FROM TYPHOID AT AGE 10-39

Period	Age 10-39	Period	Age 10-39
1849-1853	62.4%	1889-1893	73.7%
1854-1858	56.8%	1894-1898	74.3%
1859-1863	55.0%	1899-1903	71.3%
1864-1868	54.3%	1904-1908	67.0%
1869-1873	55.8%	1909-1913	67.0%
1874-1878	56.2%	1914-1918	65.0%
1879-1883	63.0%	1919-1922	66.6%
1884-1888	69.1%		

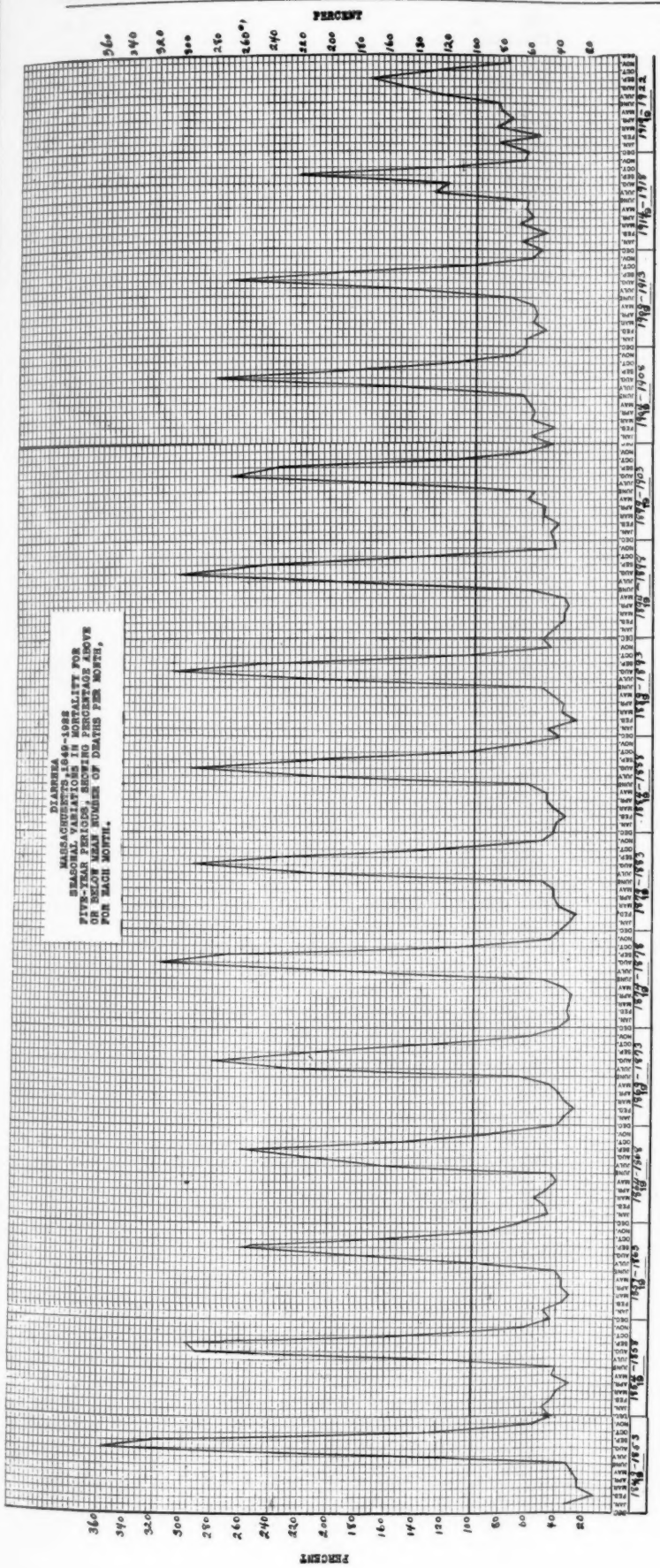
DIARRHEA
MASSACHUSETTS, 1849-1922
SEASONAL VARIATIONS IN MORTALITY FOR FIVE-YEAR PERIODS, SHOWING PERCENTAGES ABOVE OR BELOW MEAN NUMBER OF DEATHS PER MONTH, FOR EACH MONTH.
PERCENT

FIGURE 69

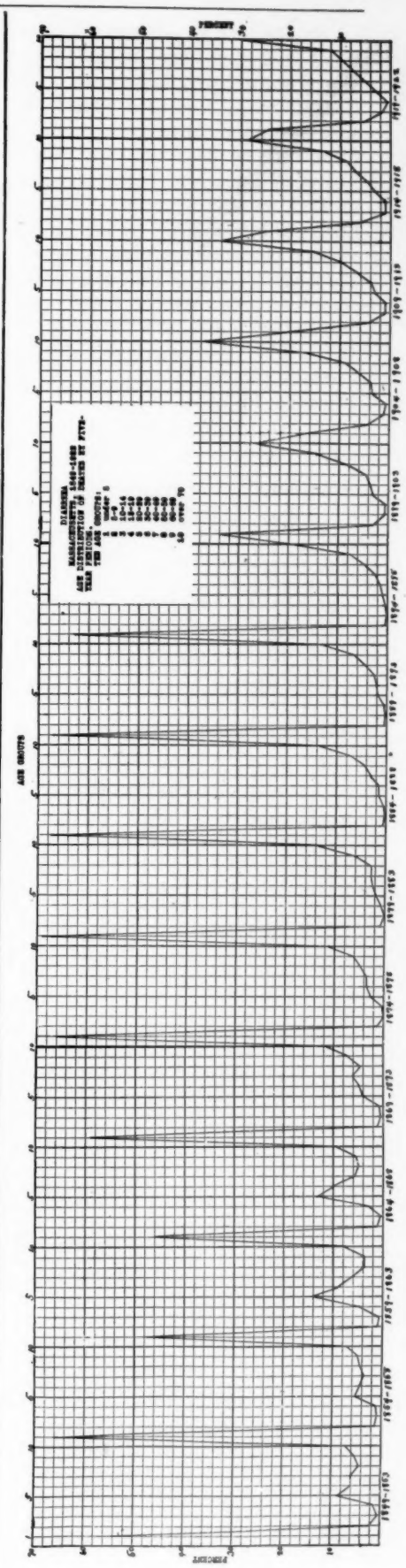

FIGURE 70

2. *Diarrhea.* From 1849 to 1900 this diagnosis included cases in infants, although by far the greater proportion of infantile diarrheal deaths were included under a separate diagnosis—cholera infantum. In 1901 diarrhea was classified as diarrhea and enteritis under two years of age; and over. The latter only is included in the figures studied. Accordingly in figure 70 the 11th period shows a marked decrease in deaths under 5 with a corresponding increase in the oldest groups. The age groups in which most deaths from typhoid fever occur are between ten and thirty nine years. During the fifteen periods shown in figure 70 the percentage of total deaths in these age groups has been as follows:

TABLE 14

PROPORTION OF MORTALITY FROM DIARRHEA AT AGE 10-39

Period	Age 10-39	Period	Age 10-39
1849-1853	17.1%	1889-1893	5.0%
1854-1858	12.2%	1894-1898	3.4%
1859-1863	28.9%	1899-1903	8.5%
1864-1868	27.0%	1904-1908	9.2%
1869-1873	10.2%	1909-1913	9.1%
1874-1878	6.2%	1914-1918	10.0%
1879-1883	5.2%	1919-1922	10.7%
1884-1888	3.6%		

In figure 69 the seasonal distribution is seen to have been quite regular, the peaks occurring in August or September. It may therefore be conservatively estimated that at least half of the deaths at ages 10-39 were due to typhoid or paratyphoid. Table 12 column 4 shows the number of deaths recorded as enteritis which were probably typhoid or paratyphoid.

(To be continued)

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OPENING OF THE DIPHTHERIA SEASON

Parents and persons in care of children should exercise their right to protect the children against this disease. Black diphtheria formerly sent fear into the hearts of parents, but today, with so many children protected against diphtheria by having had the diphtheria vaccine, "toxin-antitoxin," the cases have diminished within a seven-year period so that it actually seems as if diphtheria will soon be as rare as typhoid. Now is the time to protect your children against diphtheria this year if they are going to be protected, for diphtheria reaches its height early in December and unless precautions are taken now it will be too late to carry out preventive measures.

Eight per cent. of the diphtheria cases in Connecticut die, in spite of the modern use of diphtheria antitoxin and the fact that most parents call physicians early in case of illness of children. This shows that when we wait to cure a disease, fatalities occur. It is far better to prevent disease. Children of Connecticut should be protected now against diphtheria. The protection given by the use of diphtheria toxin-antitoxin lasts for many years.—*Bulletin, Connecticut Department of Health.*

MEDICAL EXAMINATION FOR MOTOR DRIVERS

One of the almost inevitable results of the increase of motor traffic is that every year a certain number of deaths takes place in connection with motor accidents. It is often hard to apportion blame in such cases, but it is a safe premise that the fault must lie with one of the two parties or possibly with both. Carelessness on the part of a pedestrian as a rule meets with its own punishment, and does not need the deterrent of judicial proceedings. There is, however, at the present a widespread feeling that suitable legislation might greatly diminish the number of accidents for which the motorist can be blamed. We do not pretend to have discovered a solution of our own for this difficult problem, though it may be pointed out that a relatively high proportion of fatal accidents occur where motor traffic passes through residential quarters such as slums or, on the other hand, suburbs, and that the high-road, except at such danger points as corners, cross-roads and steep hills, is relatively safe. A rumor has recently appeared in the daily press that the Irish Free State proposes not to grant a motor license without a preliminary medical examination. As the Civic Guard have so far commanded the respect of motorists in general by their capable handling of the traffic problem and abstention from petty annoyances, it may be assumed that such a startling innovation as that we have referred to will not be made without full consideration. But, indeed, it is hard to see the value of even a most searching "once over"; what particular type of accidents is it hoped to avoid? Surely an examination of cars and the skill of their drivers would be more to the point. Attention should particularly be directed to the condition of hire and hackney cars, which, with their combination of defective brakes and poor acceleration, may both tempt the driver to keep up speed and make it peculiarly dangerous for him to do so. But if the public is to be protected against physical defect or illness, we cannot believe that a medical examination will do this. Judgment is the most important virtue of the good motor driver; a feeling of responsibility comes next. Absence of either of these qualities or clouding of them by such poisons as alcohol does untold damage every year, and, unfortunately, it is very hard to detect the fool or the tippler until after the offence. Moreover, it is slight inebriation rather than profound drunkenness which is to be dreaded. Inasmuch as it is notoriously difficult to prove slight degrees of intoxication, we cannot but feel we have reached an impasse, and that there is no protection against the dangerous driver except by enforcing severe penalties for unmistakable recklessness.—*The Medical Press.*

MEDICAL PROGRESS

PROGRESS IN TUBERCULOSIS*

BY JOHN B. HAWES, 2ND, M.D.

THE mortality from tuberculosis continues to decrease; its morbidity, the incidence of the disease, owing to earlier and better diagnosis and prompter reporting of cases may be expected to increase a little, if anything. This is as it should be and in itself denotes progress in the right direction. There are three lines along which definite progress has been made during the past year:

First, there has been a marked increase in the study of childhood or juvenile tuberculosis. I admit that this increase has been chiefly in interest, study and investigation but has not yet resulted in a great increase in our knowledge of this subject. Our ideas as to what constitutes hilum tuberculosis are still in a more or less chaotic state. However, real interest must eventually result in progress.

Second, there has been a great advance in our knowledge concerning heliotherapy and its recognition and adoption as a potent and fundamental method of treatment in all non-pulmonary forms of tuberculosis. We are still in the doubtful stage as to its use in pulmonary disease. The number of physicians, nurses and even patients who have purchased one form or another of a lamp to give ultra-violet rays demonstrates at least the interest in the subject, although in many cases this is not a striking example of the use of common sense.

Third, there is an increasing realization of the fact that surgery has a definite and important place in the treatment of pulmonary tuberculosis and other chronic diseases of the lungs and that it need not and should not necessarily be looked upon as a last resort measure.

These are the three chief lines along which advances have been made during the past year.

DIAGNOSIS

I cannot see that there has been any particular advance made in the early diagnosis of tuberculosis. There is still the tendency commented on in my report of a year ago on the part of younger physicians to diagnose this condition on insufficient evidence and still a marked and deplorable tendency among older and busier physicians even in Massachusetts where our standards are supposed to be high to delay making a diagnosis until the disease is in the far advanced stages.

Schneider, A. (*Ztschr. f. Tuberk.*, 1924, XL, 349), discusses the determination of activity of tuberculous disease and does not believe that too much weight should be put on the presence or absence of changes such as moisture or rales. Absence of mosture does not rule out activity nor does moisture itself indicate activity. History, temperature and pulse, general impression as to the absence or presence of toxemia are of much more value in determining an active or inactive condition. This article is sane and sound.

Hebert, G. T. (*Tubercle*, May, 1925, VI, 369), presents an excellent paper on extra pulmonary sounds, muscle sounds, scapular and cosophageal sounds. He likewise considers the anatomical variations in ribs and other parts and likewise the differences to be found in excessively fat and excessively thin persons. His article emphasizes some often neglected points.

Trudeau, F. B. (*J. A. M. A.*, June 13, 1925, LXXXIV, 1800), considers the significance of onset with hemorrhage in pulmonary tuberculosis. Out of 245 patients at the Trudeau Sanatorium only 4 per cent of those whose onset began with a hemorrhage failed to show other evidence of tuberculosis; 60 per cent of these sooner or later had a positive sputum; 69 per cent positive x-ray evidence; and 80 per cent persistent rales. Prognosis in these cases is the same as in others, no better and no worse.

MacRae, J. D. (*Radiology*, Dec., 1924, III, 464), wisely states that the x-ray man should interpret plates only in close relation with the clinician and with full knowledge of the history and clinical findings; otherwise his statements as to activity or inactivity are unjustifiable. He should come to a diagnosis only by what he sees in the plate. He believes peribronchial tuberculosis to be an unfortunate term as often it does not mean tuberculosis. The evolution of root changes in the lungs of children is one of the greatest problems in x-ray work. Clinical findings are always essential to a diagnosis.

Baum, F., and Black, L. T. (*Am. Rev. Tuberc.*, Nov., 1925, XII, No. 3), urge the further use of apical plates in the diagnosis of pulmonary tuberculosis. The article shows an interesting comparison between general plates of the lungs and corresponding apical plates by which the value of the latter is demonstrated beyond a doubt.

Hayes, R. M., and Trostler, I. S. (*Radiology*, Dec., 1924, III, p. 474), suggest as an aid to early diagnosis in doubtful cases the taking of x-ray plates before and after giving a subcutaneous tuberculin test, hoping that the focal reaction in the lungs thereby produced will show in the second plate. I believe this to be a dangerous procedure and one that should be discouraged.

Bissel, F. S. (*Am. J. Roentgenol.*, Feb., 1925, XIII, 126), presents a careful article on x-ray evidence in differentiating chronic pulmonary lesions.

Lynham, J. E. A. (*Tubercle*, July, 1925, VI, 473), discusses the x-ray diagnosis in early tuberculosis. He does not believe in the term, *active*, but is of the opinion that the x-ray man can well use the terms *recent or old infections*.

Kahn, M., and Sloan, M. F. (*Radiology*, March, 1925, IV, 198), and Waring, J. J. (*Radiology*, March, 1925, IV, 188), discuss in their articles the use of the x-ray in the diagnosis of tuberculosis.

Schwartz, Y. (*Lancet*, Dec. 27, 1925, CCVII, 1331), takes up the question of the differential diagnosis, discussing bronchial and pulmonary infections with various spirochetes and recommends neosalvarsan intravenously as an effective remedy.

Boidin and Potron (*Pierse Med.*, Dec. 3, 1924, No. 97, 965) describe a case clinically mistaken for tuberculosis in which the autopsy findings showed a lung infection with saccharomyces.

PNEUMOCONIOSIS

The subject of pneumoconiosis is now becoming one of intense interest in those states such as Massachusetts where the terms of the Workmen's Compensation Act are given a liberal and broad interpretation. In this state a workman who is exposed to irritating dusts and who thereby develops pneumoconiosis or tuberculosis is considered to have suffered an industrial accident and comes under the terms of the Workmen's Compensation Act.

Oliver, T. (*Brit. M. J.*, April 11, 1925, No. 3354, p. 685), in an interesting and scholarly article on this subject, considers silica the most dangerous dust, with marked shortness of breath on slight exertion as the chief feature. This condition often is and may be fatal without tuberculosis. It is often complicated by tuberculosis. Particles of silica are not easily carried away and cause a slowly developing and increasing fibrosis. A silicotic lung is more susceptible to tuberculosis than a non-silicotic lung.

May, W., and Petrie, T. (*Beitr. z. Khn. d. Tuberk.*, 1924, LVIII, 168), describe pneumoconiosis and its incidence among porcelain workers.

Landis, H. R. M. (*J. Industrial Hygiene*, Jan., 1925, VII, 1), presents a study of the morbidity and mortality rates in persons in supposedly dusty occupations. He believes that a high mortality rate is not adequate proof that the dust itself is at fault. Organic dust is not harmful and does not produce pneumoconiosis.

Patschkowski (*Beitr. z. Khn. d. Tuberk.*, 1923, LVII, 113) believes that the x-ray picture is the chief means of diagnosis and that its uniform distribution suggests pneumoconiosis, apical lesions speak for tuberculosis, and fever is particularly important in diagnosing tuberculosis.

HILUM TUBERCULOSIS

Hawes, J. B., and Friedman, E. (Boston Med. and Surg. J., May 14, 1925, CXCII, 954), show clearly the chaotic condition that exists among x-ray men as to their ideas concerning the diagnosis of hilum tuberculosis and a similar confusion of ideas between the x-ray men and the clinicians. Until there is some more uniform standard of diagnosis there will not be great progress in this subject.

Von Friedrich, W. (*Ztschr. f. Tuberk.*, 1924, XL, 100), considers the symptomology of hilum tuberculosis and emphasizes the fact that these symptoms can be caused by other diseases than tuberculosis. Among other conditions which may cause increase in the hilum glands he mentions anthracosis and certain heart conditions. Treatment is along the lines of hygiene, diet and heliotherapy.

Debié, Duhem, and Petot (*Presse Med.*, May 2, 1925, No. 35, 574) take up the subject of non-tuberculous tracheo-bronchial adenopathy but unfortunatey come to no conclusion as to how this differential diagnosis is to be made.

Gibson, C. B. (Boston Med. and Surg. J., Sept. 3, 1925, CXCIII, 457), urges the establishment of sanatoria for tuberculous children and describes the advantages of treatment in sanatoria over treatment at home. He describes the methods in vogue, especially heliotherapy, at the sanatorium in Connecticut of which he is in charge. His ideas are in accord with the recently adopted policies of Massachusetts according to which North Reading and Westfield Sanatoria are now exclusively devoted to children.

Cummins, S. L. (*Brit. J. Tuberc.*, Apr., 1925, XIX, 65), in his article emphasizes that tuberculosis is a childhood and home infection and backs up his opinion with figures. He urges the training and discipline of all adult tuberculous persons as an important means of combating childhood tuberculosis.

Lanzer, H. (*Zeitschr. f. Kinderhk.*, Jan., 1925, XXXIX, No. 1, 60), believes that children have far more resistance to tuberculosis, as shown by calcium deposits in their lungs, than is usually supposed, but none the less urges the protection of children from familial tuberculosis.

Kreuser, F. (*Beitr. x. Khn. d. Tuberk.*, 1924, LVIII, 500), presents studies of tuberculous infection in young infants and children.

Wetchler, S. (*Arch. Pediatrics*, May, 1925, XLII, 324), urges the pasteurization of milk as the biggest factor in preventing childhood infection.

Chandler, F. G., and Preston, T. W. (*Brit. J. Child. Dis.*, Jan.-Mar., 1925, XXXII, 1), em-

phasize the point that absence of mortality for tuberculosis in childhood does not mean the absence of infection. They admit the difficulty of making a positive diagnosis but find the following points valuable: "croupy" cough at night, vague ill health, afternoon fever, loss of weight, evidence of hilum enlargement as shown by x-ray (by no means necessarily indicating tuberculosis). They believe that an x-ray examination should be made, but conclude that after all it is of comparatively little help.

Bell, A. J. (*Arch. Pediatrics,* Feb., 1925, XLII, 82), concludes that the largest and most important group of children to handle is the undernourished and potentially tuberculous group. All our efforts in the tuberculosis campaign should be directed toward this class.

Peiser, J. (*Monatsch. f. Kinderhk.,* May, 1924, XXVIII, 146), is of the opinion that children with tuberculous parents are slightly below the average normal weight but in other respects are, if anything, a little above the average normal child.

Redeker, F. (*Arch. f. Kinderhk.,* Dec., 1924, LXXV, No. 2106), believes that it is important to differentiate between hilum tuberculosis in which the glands alone are involved and a similar condition in which not only these glands but the lung parenchyma is involved. The latter is the most important to treat. He believes the x-ray is the best method of making this differential diagnosis. His conclusions can hardly be accepted in this country in view of the present confusion which exists among x-ray men on this subject.

Smellie, J. M. (*Brit. J. Child. Dis.,* Apr.-June, 1925, XXII, 110), found tuberculosis of the tracheo-bronchial glands in 47 out of 450 autopsies. He comments on various unusual complications as the cause of these glands.

Guinon, L., and Levesque, J. (*Arch. d. Med. d. Enf.,* Aug., 1925, XXVIII, 465), go so far as to doubt the existence of non-tuberculous chronic bronchial adenopathies, basing their diagnosis on x-ray observation taken in the midst of acute infections and again six to eight months afterwards. They then go on to state in this most amazing article that it is not difficult to distinguish between tuberculous and non-tuberculous cases.

Stewart, C. A. (*Am. Rev. Tuberc.,* Mar., 1926, XIII, 3), finds the vital capacity of children with marked juvenile tuberculosis slightly below that of the normal child and though under treatment it improves it still remains below normal. This reduction of vital capacity he believes is probably due to general undernutrition and to the mechanical action of the tracheo-bronchial lymph nodes.

TREATMENT

Joress, M. H. (Boston Med. and Surg. J., Sept. 3, 1925, CXCIII, 471), takes a somewhat radical viewpoint in regard to the treatment of early tuberculosis and advises that every patient go to a sanatorium at once. He deplores the fact that so many physicians advise the patient to take it easy or to take a vacation for a while. He fails to realize that in many instances the physician is faced with an absolute refusal on the part of the patient and his relatives to even consider sanatorium treatment and that half a loaf is better than none at all. Had his experience in handling this class of patient in private practice and outside of a sanatorium been greater he would have realized the utter impossibility of persuading a large proportion of early cases to go to a sanatorium.

Peters, L. S. (*Med. J. and Rec.,* Jan. 7, 1925, CXXI, 29), believes that rest can be continued too long in certain cases and it is his opinion that occasionally even advanced patients can work for years. Physical findings in the chest should not be given undue weight as compared with the constitutional signs and symptoms and the general condition of the patient. He describes his system of graduated exercise and believes that at every sanatorium wherever possible the patient should be up and around and leading a normal life for at least six months before his discharge. His ideas on the subject are of great interest, but are, unfortunately, of a distinctly Utopian character.

Walters, F. R. (*Tubercle,* Mar., 1925, VI, 277), gives a sane article in regard to diet in tuberculosis, urging that it be made as nearly normal as possible.

Webb, G. B. (*J. A. M. A.,* Sept. 19, 1925, LXXXV, 867), emphasizes his already well-known views on the value of postural rest and describes how to bring this about by means of sand and shot bags, etc.

Weisz, A. (*Jahrb. f. Kinderh.,* Apr., 1924, CIV, 365), believes most enthusiastically that x-ray treatment of tuberculosis even in the pulmonary condition is long past the experimental stage and is one of the best and most valuable methods of treatment we have. This might be characterized as interesting, if true.

Kuhn, A. (*Beitr. z. Khn. d. Tuberk.,* 1924, LVII, 453), commenting on the comparative rarity of tuberculosis in workers in coal, lime, and curiously enough he includes silica, has made up a powder consisting of 70 per cent calcium, 10 per cent silica acid, 15 per cent coal and 5 per cent iron, to which has been added a small amount of trypsin to dissolve mucus, which he himself has inhaled with no bad results! He recommends this in the treatment of tuberculosis and asthma and calls it a specific scar tissue stimulant. I include this article simply to show to what extent enthusiasm may carry one.

There have been the usual number of cures for tuberculosis exploited during the past

year. Among these may be quoted Ectotuberculin, Angiolymph, Gold treatment, Krysolgan, Sanocrysin of Moellgaard, Ethyl Morrhuate, Ethyl-Chaulmoogric ether, Lipoid treatment. The following are a few references of the discussion of these various so-called cures and methods of treatment:

Gelarie, A. J., and Greenbaum, F. R. (*Am. Rev. Tuberc.*, Dec., 1925, Vol. XII, No. 4).

Sweany, H. C., and Wasick, M. M. (*Am. Rev. Tuberc.*, Dec., 1925, Vol. XII, No. 4).

McCluskey, K. L., and Eichelberger, L. (*Am. Rev. Tuberc.*, Dec., 1925, Vol. XII, No. 4).

HELIOTHERAPY

As I said in the introduction of this report, the increase in our knowledge concerning sunlight, real and artificial, and its value has been one of the outstanding advances of the past year. Up to comparatively recently, heliotherapy has been considered available only at the seashore during the summer months or in the high and rarefied atmosphere of the mountains but hardly available for New England's climate. The work of Gibson in Connecticut, however, and of LoGrasso in Perrysburg, New York, has done a great deal to change our ideas on this subject. As is always the case, the medical profession is very prone to look for the short cuts and has come to think that one of the various lamps which produce artificial sunlight is a quicker and equally efficient method as compared with actual sunlight and to the physician a distinctly more profitable method, I regret to state, of obtaining results. One of our most high-grade pediatricians, for instance, told me that he was using the Alpine Sun Lamp for "practically everything", while its use in health resorts such as Saranac Lake, for instance, has come dangerously near the unethical in certain instances. Our trouble at present is the lack of detailed knowledge on the part of physicians as to the practical use of sunlight and its dangers. I would advise every physician to read LoGrasso's article (*Therapeutic Gazette*, Aug. 15, 1925) in order to get a clear idea on the subject.

Hawes, J. B. (Boston Med. and Surg. J., Feb. 18, 1926, 194, 7, p. 281), has given the details of the use of sunlight in private practice. This is distinctly needed, as, to a large extent, this method of treatment has been confined to sanatoria and preventoria.

Peacock, P. P. (*Lancet*, Aug. 22, 1925, CCIX, 309), considering the action of ultra-violet rays, concludes that pigmentation, which is usually looked upon as a most favorable sign and to be attained at any cost, defeats the very ends which are desired by protecting the body from the action of the ultra-violet rays. He advises, therefore, the use of the maximum dose of sunlight which will just fall short of producing pigmentation. His ideas, which are of distinct interest and decidedly revolutionary, are not yet to be accepted.

Hall, P. (*Brit. J. Tuberc.*, Jan., 1925, XIX, 21), while recommending artificial heliotherapy in early tuberculosis in children and adults, believes that in the later stages it should be used with the greatest of care. He confirms the previous writer in his idea that too rapid pigmentation is to be avoided as it protects the patient against further dosage.

Gauvain, H. (*Lancet*, July 4, 1925, CCIX, 10), is an ardent and enthusiastic believer in artificial sunlight and goes into every detail concerning the various lamps, but wisely calls attention to their expense.

Howze, H. H. (*Am. Rev. Tuberc.*, May, 1926, XIII, 5), finds as a result of his experiments that ultra-violet rays are bactericidal to tubercle bacilli after an exposure of 5 minutes at 10 inches.

Kowler (*Presse Med.*, Nov., 1924, No. 88,865) advised heliotherapy in laryngeal tuberculosis and tuberculosis of the epiglottis instead of more radical measures. This is in accord with the work of Gerald Webb of Colorado Springs, who for years has advocated by means of ingenious arrangements of throat mirrors the use of actual sunlight in tuberculosis of the throat.

Gerstenberger, H. J., and Wahl, S. A. (*J. A. M. A.*, Nov. 22, 1924, LXXXIII, 1631), review literature on the subject of artificial heliotherapy and its value in regard to glandular tuberculosis.

Many other articles on heliotherapy have been published during this past year, but anyone interested in the subject can get all the necessary information by reading the work of Dr. Horace LoGrasso (*Therapeutic Gazette*, Aug. 15, 1925), and especially the original work of Rollier himself, or better still, by getting in touch with Dr. LoGrasso personally at the J. N. Adam Memorial Hospital, Perrysburg, New York. There is still doubt as to the value of artificial sunlight in pulmonary tuberculosis. For the first time I personally am using it this summer in my practice in certain selected cases of pulmonary tuberculosis where the process is quiescent but has apparently reached a standstill. I have prepared a sheet of directions from those used by LoGrasso and Rollier and each patient is made to follow these directions explicity. It is only by some such method as this that complications and accidents are to be avoided.

SURGERY IN TUBERCULOSIS

In this subject, too, great advances have been made and readers are referred to the recent book by John Alexander ("Surgery of Pulmonary Tuberculosis," Lea & Febiger, Philadelphia) of the University of Michigan and to the writings of J. A. Miller and Lambert of New York and

Wyman Whittemore of Boston on the same subject. At the meeting of the Tuberculosis Section of the Massachusetts Medical Society on June 8 Dr. Miller of New York gave a scholarly address covering the subject of the surgical treatment of pulmonary tuberculosis, including that of pneumothorax.

Lilienthal, H. (*Am. Rev. Tuberc.*, Aug., 1925, XI, 6), considers the extra-pleural thoracoplasty in pulmonary tuberculosis the best operation in the majority of the cases. In a majority of instances at the same time he divides the cervical portion of the phrenic nerve. This operation provides conditions by which fibrosis and arrest are facilitated. It is applicable in two groups of patients: (1) in those whose immediate outcome is bad; (2) in whom progress is so slow that years of chronic invalidism may be expected. The dangers are: (1) injuries to arteries and nerves; (2) hemorrhage, the shock of which is usually slight. He also believes that operation is advisable when respiratory and cardiac action are embarrassed by traction upon the mediastinum. In cases where one lung is irretrievably diseased and the other fairly good with a bad prognosis, operation is justified even though the mortality is high.

Sauerbruch, F. (*Arch. f. khn. chir.*, 1924, CXXXIII, 277), one of the outstanding authorities on this subject, presents in this article a general review of chest surgery.

Guilleminet, M., and Madinier, J. (*Rev. de la Tub.*, June, 1925, VI, 318), from a rather different point of view present a remarkably comprehensive review of the entire field of lung surgery.

Archibald, E. (*J. A. M. A.*, Aug. 29, 1925, LXXXV, 663), whose writings on this subject are of distinct interest; Hudson, B. (*Brit. J. Tubérc.*, July, 1925, XIX, 127); Whittemore, W. (Boston Med. and Surg. J., Sept. 17, 1925, CXCIII, 542); Thearle, W. H. (*Med. J. and Rec.*, Oct. 7, 1925, CXXII, 399), present articles on surgery of the lung in tuberculosis with special references to the indications and contraindications for extra-pleural thoracotomy.

Amberson, J. B., Jr. (*Med. J. and Rec.*, Jan. 7, 1925, CXXI, 32), takes up this subject in a conservative and scholarly way and believes that surgery is indicated only after pneumothorax has failed. Tuberculous and even nontuberculous complications are more often helped rather than made worse as a result of surgical intervention. He groups and classifies cases for which this operation is indicated. The article is well worth reading.

Peters, L. S. (*Am. Rev. Tuberc.*, Feb., 1926, XIII, 2), believes that artificial pneumothorax in properly selected cases is the best treatment for pulmonary tuberculosis. He does not believe that chest surgery offers more but that thoracoplasty should be tried on all patients in whom a pneumothorax cannot be done, providing the physical condition of the patient is fairly good and that the clinician does not attempt pneumothorax purely as a last resort. His other lung must be nearly normal. He believes that a chest surgeon properly qualified is a necessity for this operation. He is of the opinion that a two-stage operation under local anesthesia is the best. He reports his results in 12 cases.

Dubrow, J. L. (*Am. Rev. Tuberc.*, Apr., 1926, XIII, 4), warmly advocates pneumothorax in properly selected cases and when this fails thoracotomy should be tried. The more conservative measures, general rest, etc., should be given a fair trial before any radical measures are attempted. Every thoroughly equipped sanatorium should be able to carry out these measures.

INTESTINAL TUBERCULOSIS

The real advance that has been made in our knowledge of intestinal tuberculosis during the past year has been the publication of a book by Lawrason Brown and Homer Sampson of Saranac Lake embodying the results of their investigations on this subject during the past five to ten years. Anyone wishing good, authoritative and first-hand information on this subject is referred to this book ("Intestinal Tuberculosis —Diagnosis and Treatment," by Brown and Sampson, Lea & Febiger, Philadelphia). It is well, however, to bear in mind that their statements as to the x-ray diagnosis based on filling defects and hypermotility are not accepted by all the roentgenologists of this country, and, further, that their ardent advocacy of lamp treatment in this condition is certainly not accepted, as the majority of us believe that actual sunlight by the slower and longer process is distinctly better. Last November (*Ann. de Med.*, Nov., 1924, XVI, 381) they published an article based on 1614 cases supporting their contentions.

Erickson, R. J. (*Am. Rev. Tuberc.*, XII, 1, Sept., 1925), presents a study of 100 cases of intestinal tuberculosis complicating pulmonary disease and 40 negative cases. The period of greatest incidence was from the 12th to the 18th month after onset of pulmonary disease. A clearly defined onset occurred in two-thirds of the cases. Chronic constipation and indigestion were usually present. Pain in the right lower quadrant usually after meals was found in 71 per cent; nausea in 66 per cent; and diarrhoea in 47 per cent. Alternation of constipation and diarrhoea was usually of no significance.

In another article (*Am. Rev. Tuberc.*, Sept., 1925, XII, 1) he reports on the effect of artificial heliotherapy with ultra-violet light, 85.2 per cent favorable results in 81 cases with 24.7 per cent of entire relief. In 12 per cent this entire relief has lasted three to four years. Pain,

nausea and vomiting seem to be most effectually relieved. He believes ultra-violet rays to be of very definite value for the relief of symptoms in intestinal tuberculosis.

Lynch, J. M. (*J. A. M. A.*, Jan. 3, 1925, LXXXIV, 24), discusses ileocecal tuberculosis. He disagrees with Brown and Sampson and does not believe that filling defects are constant. Diagnosis rests chiefly on symptoms, chief of which is pain in the umbilicus and left side, indigestion and gas, and, latest of all, diarrhoea. He believes that early surgical treatment is the best and, curiously enough, makes no mention of heliotherapy.

Taylor, J. (*Med. J. and Rec.*, Jan. 7, 1925, CXXI, 27), discussing intestinal tuberculosis, agrees with Arbuthnot Lane that intestinal stasis always precedes hypermotility and is an early symptom.

PULMONARY SYPHILIS

Rouslacroix and Blanc (*Presse Med.*, Jan. 21, 1925, No. 6, 89) report a case of syphilis of the lung, confirmed by autopsy, consisting of syphilitic pleuritis and an epidermoid epithelioma of the lung. A case of this sort where the diagnosis is confirmed by autopsy findings, although not truly a disease of the lungs, comes vastly nearer the truth than the majority of articles on this subject.

Kirkwood, R. C. (*Am. Rev. Tuberc.*, Mar., 1926, XIII, No. 3), for instance, in a somewhat startling article on this subject states that pulmonary syphilis is associated with pulmonary tuberculosis in 1 to 11 per cent of cases admitted to sanatoria! He further states that during the past seven to eight years he has seen a number of cases diagnosed as pulmonary consumption which turned out to be pulmonary syphilis with no tuberculosis. Unfortunately, he does not present autopsy findings to confirm his interesting observations. In his opinion, the symptoms are the same as those in moderately advanced tuberculosis, although loss of weight is not so marked. Rales inconstant, particularly of the "coarse, moist" variety, are more or less characteristic. This article is so extremely inaccurate and misleading, coming as it does from such an authoritative magazine as the *American Review of Tuberculosis*, that it is intentionally commented on in my report. He gives the summaries of a number of cases which he calls pulmonary syphilis which to any even semi-intelligent reader would appear to be bronchiectasis, broncho-pneumonia, chronic pleuritis, etc.

MISCELLANEOUS

Fansler, W. A. (*J. A. M. A.*, Aug. 29, 1925, LXXXV, 671), discusses the relation of pulmonary tuberculosis and fistula in ano, concluding (1) that the diagnosis of tuberculous fistula is not justified unless it is confirmed by microscopic examination with a clinical picture of tuberculous ulcer; (2) that not over 2 to 3 per cent of such fistulas are tuberculous; (3) that tuberculosis is rarely primary in such fistulas; (4) that only 15 per cent of fistulas occurring in pulmonary tuberculosis are of tuberculous origin. In all underweight and poorly nourished persons with a fistula a careful examination should be made for pulmonary tuberculosis. This article is rather illuminating but somewhat radical. I am personally of the opinion that the percentage of fistulas occurring in tuberculous persons which are of tuberculous origin is distinctly greater than he states.

Ocular Tuberculosis: Savin, L. H., and Preston, T. W. (*Lancet*, May 9, 1925, CCVIII, 965), endeavor to combat the universally accepted opinion that phlyctenular conjunctivitis is due to a tuberculous toxemia. Their arguments are not convincing, however. They claim malnutrition as a predisposing cause, and also that an unbalanced diet, excess of carbohydrates or a deficiency of fats will lead to this condition. In their opinion, tuberculin treatment is not indicated and they urge treatment by means of diet. The article and the conclusions to which they come are not convincing. The work of the Boston Tuberculosis Association during the past two years on this subject with a full time worker engaged in studying phlyctenular conjunctivitis shows that 25 per cent of such patients (chiefly children) come from families in which there is an adult case of pulmonary tuberculosis. This fact alone would tend to refute the statements above mentioned.

Goulden, C. (*Tubercle*, Feb., 1925, VI, 209), discusses the various tuberculous conditions of the eye and agrees with the previous writers, Savin and Preston, that the tuberculous origin of this condition has been very much overestimated. He in turn feels that there is a definite connection between diseases of the nose and phlyctenular keratitis.

Pain in the chest: Bray, H. A. (*Am. Rev. Tuberc.*, Jan., 1926, Vol. XIII, No. 1), believes that neither the friction nor the muscular theory can adequately explain the characteristic inspiratory pain accompanying pleurisy, but that it is really due to tension of the inflamed pleura.

Swetlow, G. (*Am. Rev. Tuberc.*, Jan., 1926, Vol. XIII, No. 1), has treated severe and chronic pleuritic pain with success by means of injection of 2 to 3 c.c. of 80 per cent alcohol to the corresponding intercostal nerve.

Concealed Tuberculosis: Geer, E. K. (*Am. Rev. Tuberc.*, Jan., 1926, Vol. XIII, No. 1), in this article comments on a recent book by Head, G. D. ("Concealed Tuberculosis," P. Blakiston's Son & Co., 1924), and Warfield, L. M. (*Am. Rev. Tuberc.*, 1925, XI, 112), on "Occult Tuberculosis" and finds much to disagree with concerning this interesting and important subject. He does not believe that any form of tu-

berculin test is of any value in distinguishing between tuberculous disease and tuberculous infection. The absence of a general reaction to a tuberculin test is far more helpful than its presence. It is quite unwarranted, in his opinion, to base a diagnosis of occult or concealed tuberculosis on a positive reaction. The solution of this difficult problem of occult tuberculosis is not to be found in any one test but by means of searching and repeated examinations and prolonged observation. His article is an excellent one and does much toward bringing the diagnosis of this important condition to a common sense and logical basis.

Pleurisy of the Mediastinum: Jean (*Am. d. Med.*, Oct., 1925, XVIII, 307) is of the opinion that pleurisy of the mediastinum is less rare than it is actually thought. Symptoms are those of pressure, systolic murmur at the base of the heart, dilatation of the veins of neck, head and arms, and especially on the left, recurrent laryngeal paresis. The x-ray picture shows a unilateral condition which differentiates it from pericarditis.

Duhem, P., and Séguin, P. (*Presse Med.*, Apr. 1, 1925, No. 26, 424), consider the same subject.

Conjugal Tuberculosis: Arnold, E. (*Rev. d. l. Tuberc.*, Mar., 1925, VI, 177), believes that adult tuberculosis is the result of a superinfection on an already existing infection. This may be exogenous or endogenous. In his article he comments on the variance of opinion in regard to it and upon the little accurate knowledge which seems to exist as to how large a factor conjugal infection is in these superadded exogenous infections. He presents figures on 53,000 households with 4,473 cases in which both husband and wife were affected.

Barnes, dealing with the same subject, some time ago found 2.2 per cent of husbands and wives infected, and Ward, an English observer, 5.8 per cent.

Arnold concludes that considering the intimacy of contact there is surprisingly little evidence that conjugal tuberculous infection is an important factor.

Tuberculosis and Valvular Heart Disease: Gödde, H. (*Bertr. z. Khn. d. Tuberk.*, 1924, LVII, 329), considering the effect of valvular heart disease on (1) an already existing tuberculosis and (2) a subsequently developing tuberculosis, concludes that in severe third-stage tuberculosis heart disease has a bad effect; in earlier cases it may have a favorable effect, but it certainly conveys no immunity, as is often thought to be the case, and in most instances has no effect.

Tuberculosis in School Teachers: Geissler, O. (*Bertr. z. Khn. d. Tuberk.*, 1924, LVIII, 492), investigated and examined the children in a class where the teacher had open tuberculosis for a considerable period and came to the conclusion that such a teacher was dangerous only by intimate contact with the children near at hand.

Radio and the Tuberculous Patient: Rosenau, W. H. (*Am. Rev. Tuberc.*, May, 1926, XII, 5), commenting on the almost universal custom of providing tuberculous patients with radio service, concludes that radio is not an unmixed blessing and that its indiscriminate and unrestricted use is unwise and that the reaction of each individual patient following its use should be noted.

Climate: Miner, J. R. (*Am. Rev. Tuberc.*, Apr., 1926, XIII, 4), refutes the theory that the death rate from tuberculosis is higher in countries that have a severe winter climate, which was supposed to be due to the fact that the windows were kept shut and often doubled, with consequent crowding inside and poor ventilation. He produces figures which tend to show that the tuberculosis death rate is higher in those parts of the United States where the mean winter temperature during the month of January, for instance, is between 30° and 40°, which might be considered a moderate winter climate, than it is in that part of this country where the winters are either colder or much warmer.

Tuberculosis and the Medical Profession: Blumel, K. H. (*Bertr. z. Khn. d. Tuberk.*, 1924, LVIII, 385), has come to the conclusion that in view of the fact that the majority of tuberculous patients must be treated in their homes, the subject of tuberculosis, its diagnosis, treatment, general handling, etc., should be taught to medical students and nurses at sanatoria and hospitals for consumptives, and not, as is the custom at present in the vast majority of cases, if it is taught at all, by teachers at the medical school who have a purely theoretical knowledge of the subject. This article is welcome. The subject is barely touched upon at the Harvard Medical School or at the Massachusetts General Hospital, whereas there are special departments in each institution for syphilis and kindred diseases, although not such an important condition as a cause of death and misery as tuberculosis. Dr. D. A. Stewart, superintendent of the Nanette Sanatorium in Manitoba, has recently reported that for the past 15 years he has had a number of medical students constantly in his sanatorium for a stay of from a few weeks to as many months, although in order to obtain this teaching they have to travel 150 miles from the nearest medical school.

Rehabilitation in Tuberculosis: Menzies, F. N. K. (*Rev. Belge d. l. Tub.*, Feb., 1925, No. 2. 47), urges the establishment of re-educational work—colonies where tuberculous patients can remain temporarily after leaving the sanatorium and become prepared for some trade, pass-

ing an apprenticeship under close medical supervision. He speaks of colonies for a permanent stay such as that at Papworth and Preston Hall in England (I believe the latter has gone out of business—J. B. H.). The majority of tuberculous patients are not suitable for these permanent colonies. Success in treatment depends upon personality, initiative and ability of the directors. On the whole, while these permanent colonies are valuable, they play only a very small part in our tuberculosis campaign for rehabilitation. Menzies is of the opinion that money is better spent in the development of clinic or dispensary systems. The work being carried on at Rutland under the directorship of Dr. Bayard Crane is intended to develop along the lines of the Papworth colony in England. It is valuable work, but, as Menzies has pointed out, it can affect only a very small percentage of the total number of patients requiring it, while the cost is bound to be high.

CONCLUSION

In this report of progress I can of course refer only to a few leading articles in each subject. I have doubtless omitted many important articles which lack of space has prevented my mentioning. I feel that on the whole the year has been one of real progress, particularly in the broadening of our scope and vision in tuberculosis work and in the realization that this work is a part and a most important part of our general campaign for universal public health.

THE VALUE OF A MAN IN THE FIVE-THOUSAND-DOLLAR INCOME CLASS—In the June issue of the *Bulletin* we presented the results of our computations of the economic value, at several ages of life, of a man earning, at the peak of his capacity, $2,500 per annum. At the age of 18, his value, estimated on the basis of the present worth of his net future earnings, was found to be $28,654. We now offer a similar computation for the man who, at his maximum, earns $5,000 a year. His value, at age 18, similarly estimated, is found to be $34,321.—*Statistical Bulletin, Metropolitan Life Insurance Company.*

BULLETIN OF THE NATIONAL COMMITTEE FOR THE PREVENTION OF BLINDNESS, 370 SEVENTH AVENUE, NEW YORK CITY—Six thousand men and women became actively interested in the movement for the prevention of blindness and conservation of vision within the last year, it is announced by the National Committee for the Prevention of Blindness in its eleventh annual report. The membership of the Committee was increased from 10,000 to more than 16,000 men and women during the last year, according to Lewis H. Carris, its managing director.

"The Committee has learned," declared Mr. Carris, "that it is not only possible to prevent actual blindness, but to prevent the development of eye defects which, though they do not render individuals blind, reduce their social and economic efficiency."

The Committee conducted during the year what is believed to be America's first preschool eye clinic, the report of which reveals that 50 per cent. of the children attending this clinic, all under 7 years of age, had some eye ailment.

"The Committee's survey of the condition of the eyes of 5,000,000 school children shows that approximately 12 per cent.—one out of every eighth child—have such seriously defective vision as to be handicapped in their school work; there is at present no reason to believe that defective vision is any more extensive among children not yet old enough to go to school."

Striking evidence of the success of the movement for the prevention of blindness is disclosed in the fact that registration of schools for the blind during the last year shows that only 11.5 per cent. of the pupils had been blinded by ophthalmia neonatorum, whereas when the Committee was first organized 11 years ago, 28 per cent. of the children in the schools for the blind had lost their sight through this one cause. The rate of blindness from this cause during the last year is lowest on record.

The Committee reports the addition of 29 sight-saving classes for public school children with such seriously defective vision that they would several years ago have been classed as blind. "While there are now a total of 234 sight-saving classes in the United States," the managing director of the National Committee said, "there should be at least 5,000." The report announced the establishment of courses for the training of teachers for sight-saving classes at the University of Cincinnati, at Peabody College, Nashville, Tenn., at the State Normal School, Ypsilanti, Mich., and at New York University.

The Committee has distributed during the last year without charge close to half a million book marks, book plates, bulletins, folders and posters, all dealing with the prevention of blindness and the general conservation of vision. Through radio talks, other lectures, and through the use of motion pictures, stereopticon slides, convention exhibits and other graphic material, the necessity for and methods of safeguarding the eyes have been brought to hundreds of thousands of other persons.

THE AMERICAN SOCIETY FOR THE PREVENTION OF CANCER, National Headquarters, 25 West 43rd Street, New York, will set out in October to secure a modest endowment fund to meet the minimum expense, only a million dollars, and the appeal will be made to the whole country.

There is no more worthy endeavor than this Society is engaged in, for the pitiable fact in connection with the hundred thousand yearly deaths in the United States is, that half the number could be saved—saved from frightful suffering and death if the afflicted only knew how.

Public education in preventive medicine is one of the foremost functions of health authorities and in co-operation the society specializes as to cancer. It aims to make known what things may mean cancer and what are. What to do and how to do it, and to do it at once. What not to do and imperatively not to delay, not to trifle or temporize, and to shun the infamous cancer cures which it exposes and runs to cover. Its work has been notably successful and the means of saving countless lives that otherwise would have been sacrificed. Solution of this mysterious disease is not yet in sight. It appears to baffle science and the only hope at present is the diffusion of information especially the importance of time, and making the important facts common knowledge as in the case of tuberculosis.—*Sanitary Bulletin, Buffalo Department of Health.*

Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY
RICHARD C. CABOT, M.D., AND HUGH CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 12401

RESPIRATORY AND CEREBROSPINAL SYMPTOMS; CAUSE?

MEDICAL DEPARTMENT

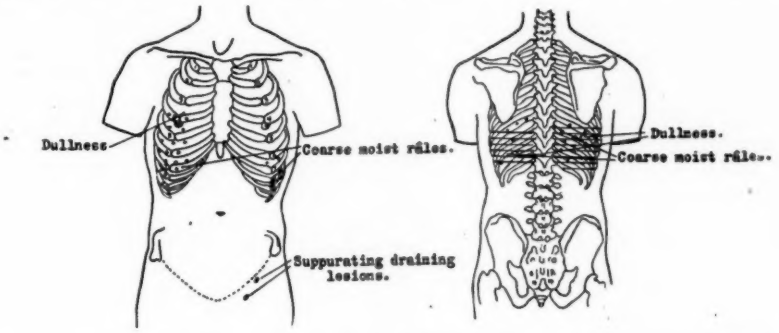
A married Portuguese woman twenty-four years old entered April 17. The complaints were headache and stupor. The history was given by her husband, who had practically no knowledge of her past life and very inaccurate information as to the present illness.

Three years before admission she had very severe pain in the upper lumbar region for a few days followed by a moderately productive cough. Although she stayed in bed for two weeks the symptoms continued for three months. Ever since this time she had had very frequent "chest colds". Two years before admission she went away for several weeks because she was "run down". A year before admission she developed lumps in the groins. The right one was opened and drained at a relief hospital, and had continued to drain. A blood Wassermann taken at the relief hospital the September before admission was reported as positive. A physician gave her several arm injections without any reactions. A week before admission she began to have severe headache and forceful vomiting several times. Her neck was stiff and sore on motion. Two nights before admission she became drowsy and did not respond to questions or notice people.

Records of the Out-Patient Department show a visit April 5, two years before her admission to the wards. Complaints, backache and cough. Pulse 136. Temperature 100.2°. She gave a history of being in bed at intervals for six months with cough and back pain. There was also pain in the left chest and night fever. She urinated 5-6 times at night for three months. She had not menstruated for three months. Examination: color good. Heart and pupils normal. Dull right apex with an occasional moist râle. Right kidney palpable. Fundus two degrees retroversion. X-ray: diaphragm indistinct on both sides. Increased density at both bases. Fine mottling at the right apex. May 10. Cough and sputum worse. No râles. Pulmonary Clinic May 16. Dullness at the right apex and medial to the right scapula. Sputum negative. X-ray: probably encapsulated fluid at left base. Heart not displaced. Large lung markings prominent. Rest of lung normal. May 28. Dullness below the left scapula, moist râles on the right. June 6. Definite fluid at the left base, encapsulated. June 13. Slight left chest pain. Signs at left base clearing up. June 25. Cough with half a glass of sputum daily. November 14. Gain of three pounds and a quarter. Slight cough with sputum. Catamenia irregular. Large mass in left lower quadrant the size of a fist, not attached to the pelvic wall. Uterus pulled to the left with full left vault. Mass not connected with uterus. November 21. Mass still present, slightly tender. No pain.

The patient's mother's first pregnancy ended in an early miscarriage and the second in a child who lived only two days. All the husband knew of the patient's past history was that she was a very strong girl. The husband admitted that he had syphilis fifteen years before admission, six years before his marriage.

Examination showed a well nourished woman, ill. The pharynx was slightly injected. The left tonsillar fossa showed a small white plaque. The heart showed marked sinus arrhythmia, occasional extrasystoles. The lung signs were as shown in the diagram. There was slight right facial weakness and weakness of the left hand and arm, with marked intention tremor. The biceps and triceps were active on both sides. The knee-jerks and ankle-jerks were normal. There was positive Brudzinski. Sensation was normal to rough tests. There was no ataxia.



The left fundus showed the disc margin on the temporal side slightly hazy; no definite choking.

The urine is not recorded. Blood examination showed 28,700 leucocytes, 90 per cent. polynuclears, hemoglobin 65 per cent., reds 5,300,000, with some central achromia, a few stippled cells, many polychromatophilic cells, moderate poikilocytosis, no nucleated cells; platelets appeared normal. Wassermann negative. April 17 lumbar puncture in the 3-4 lumbar space gave 25 c.c. of cloudy fluid, initial pressure 450, after removal of 5 c.c. 400, after removal of 10 c.c. 350, after removal of 25 c.c. 100; cough and jugular rise normal; cells, 1200 leucocytes, 52 per cent. polynuclears, 48 per cent. lymphocytes, no organisms; total protein, goldsol and Wassermann not recorded. Alcohol and ammonium sulphate very strongly positive. Three cultures of the spinal fluid showed streptococcus, one streptococcus and staphylococcus. April 18 puncture in the first and second lumbar space gave 30 c.c. of very turbid fluid with flakes, initial pressure 600, after withdrawal of 5 c.c. 340, after withdrawal of 10 c.c. 250, after withdrawal of 30 c.c. 120; cells, 7900 leucocytes, 7200 red cells, 72 per cent. polynuclears, 28 per cent. lymphocytes, no organisms; total protein 546 mgm., goldsol 0000000011, Wassermann negative, alcohol and ammonium sulphate very strongly positive. Two cultures showed streptococcus. April 19 lumbar puncture in the 2-3 space was done with slight difficulty. 15 c.c. of very turbid yellow fluid with many flakes was removed, initial pressure 280, jugular pressure 340 (rise rather slow), release 280, pulse and respiratory oscillations normal (??), after withdrawal of 5 c.c. pressure 180, after 10 c.c. 110, total protein 666 mgm., goldsol 0000000011, Wassermann negative, ammonium sulphate and alcohol very strongly positive. Gram stain to a cover glass showed streptococcus. Methylene blue showed intracellular diplococci. 30,000 cells, all leucocytes, no red cells, 91 per cent. polynuclears, 9 per cent. lymphocytes. Three cultures of the spinal fluid showed streptococcus.

The patient was placed upon the dangerous list on April 18. The next day she sank rapidly. That night she died.

Discussion

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

Our opportunities for making a correct diagnosis in this case are relatively small, first because the patient enters in stupor and can give no account of herself; secondly because the history has to be given through a husband who obviously knows very little about her and whose understanding of English is very possibly limited. Our conclusions therefore will have to be drawn largely from the Out-Patient Records and the physical examination in the hospital wards.

The history as given by her husband certainly suggests tuberculosis or Hodgkin's disease, though the suppuration in one of the inguinal glands would be unusual for the latter condition.

The positive Wassermann would suggest that the long period of debility might be due to syphilis, and it is evident that this diagnosis has been made and treatment given for it.

But apparently the symptoms of greatest importance as bearing on the present condition are the severe headache of a week's duration with projectile vomiting and a stiff and sore neck. This certainly is strongly suggestive of an organic disease of the brain, perhaps meningitis or tumor.

The Out-Patient record both of the stethoscopic examination and of the X-ray findings points to tuberculosis at the right apex associated with pleural effusion at the left base. Of considerable importance, however, as evidence pointing in another direction, is the presence of a large mass on the left side of the pelvis, apparently not connected with the uterus, very possibly ovarian.

Although it is probable that this woman has acquired syphilis from her husband, there is no good reason so far as I see to attribute any of the symptoms or physical signs now present to this disease.

NOTES ON THE PHYSICAL EXAMINATION

In the physical examination as made in the ward the lungs show remarkably little, and in particular show nothing at the right apex, where both X-ray and stethoscope had previously pointed to trouble. The distribution of the râles and dullness at the bases of both chests is what one would expect in passive congestion of the lungs or in case the diaphragm were high by reason of some trouble below. It would also be compatible with various types of pleurisy.

As to the cerebral condition, meningitis seems to be rather definitely suggested, and there is little to favor the diagnosis of tumor. The lumbar puncture removes all doubt on this point and makes certain the diagnosis of meningitis, which the previous presence of signs supposed to be due to pulmonary tuberculosis would make us tend to believe was also of the tuberculous variety, in spite of the rather high percentage of polynuclear cells in the fluid. Of great importance however are the cultures from the spinal fluid. If the meningitis is due to the streptococcus, as these cultures suggest, it would seem probable that the previous pulmonary process had been of the same type. The fluid from the second lumbar puncture is practically pus and shows a larger proportion of polynuclear cells than the first tap, while the fluid

from the third tap shows a still further increase in cells and in the percentage of polynuclear cells. The fact that streptococcus was obtained in all three tap fluids leaves me in no doubt that the meningitis was due to this organism and that death resulted from this cause.

DIFFERENTIAL DIAGNOSIS

The only points remaining to be discussed are (1) the origin of the streptococcus infection and (2) the nature of the pulmonary lesions mentioned earlier in the case. Looking back upon our earlier records of the lung condition as revealed by the stethoscope and by the X-ray it seems probable that the patient had a streptococcus bronchopneumonia and that very possibly the glandular suppuration was of the same origin.

(3) Is the pelvic mass likely to be of importance in relation to the cause of death? I think not. There is no evidence in the record of the local examination that the mass was tender or fluctuant to the degree that it would have been almost certain to be had it represented a focus of pyogenic infection. I incline to believe therefore that it represents either a fibroid or an ovarian growth, in either case having no relation to the patient's death.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Brain abscess.
Meningitis, streptococcus.

DR. RICHARD C. CABOT'S DIAGNOSIS

Streptococcus meningitis.
General streptococcus septicemia.

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesion*

Purulent meningitis, streptococcus.

2. *Secondary or terminal lesions*

Abscess in paravertebral tissues, in the lumbar region, and in the psoas muscles, with sinus in the left side opening through the skin in the region of the upper part of the left thigh anteriorly.
Soft hyperplastic spleen.
Hemorrhagic edema of the lungs.
Fatty metamorphosis of the liver.

3. *Historical landmarks*

Chronic pleuritis with small mass of obsolete tuberculosis in the right pleural adhesions.

DR. RICHARDSON: The pia along the convexities was coated slightly with pus in places, but along the base beginning in the region of the upper end of the cord and extending forward over the medulla and pons, out the fissures of Sylvius, between the frontal lobes and on the superior surfaces of the cerebellum there was a thick layer of fibrinopurulent exudate. Cover glass from the pus showed leucocytes and streptococci. The vessels of Willis, sinuses, middle ears and the pineal and pituitary glands were negative. The brain weighed 1270 grams.

In the region of the upper part of the left thigh the skin showed a small loss of substance at the base of which a sinus led into the subcutaneous tissues. A short distance above this, about the region of Poupart's ligament, there was another small loss of skin substance at the base of which a sinus led into the subcutaneous tissues and along the retroperitoneal tissues to the region of the left psoas muscle. The sinuses contained purulent material. Cover glass from this material showed streptococci but no tubercle bacilli.

The pleural cavities were obliterated by old adhesions.

The tissue showed moderate hemorrhagic edema. On the right side there were no pleural adhesions. Over the left lower lobe there was a small fibrocaseous mass.

The liver weighed 1710 grams. The tissue was pale brownish yellow and doughy,—fatty metamorphosis.

The spleen weighed 255 grams,—slightly enlarged. The tissue was mushy.

In the lumbar region of the spinal column the paravertebral tissues and psoas muscle on each side were markedly infiltrated with pus. The sinus on the left side communicated with this region on the left. No definite tuberculous changes microscopically or macroscopically were made out in the vertebrae.

A case of purulent meningitis, streptococcus, with abscesses in the paravertebral tissues in the lumbar region and in the psoas muscles with sinus formation.

CASE 12402

NECROPSY 4990

STOMACH SYMPTOMS; ULCER OR CANCER?

SURGICAL DEPARTMENT

An Irish boiler tender sixty-three years old entered April 7.

A year before admission he began to have burning, gnawing epigastric pain, at times radiating to the left, at times to the back. It occurred two hours to two hours and a half after every meal and was relieved by soda, milk of magnesia and coffee. If untreated it lasted about three-quarters of an hour. He had nausea with it, and three months before admission started vomiting, usually three times a week, at midnight. The vomitus was about half a glassful of light

yellow material containing food eaten at supper. He had seen no blood in the vomitus or stools. In the past year he had lost fifteen pounds. He had been afraid to eat because of the pain. Nine months before admission he saw a physician who gave him medicine without relief. During the past three months his symptoms had increased and he had vomited about twenty times.

His family history shows nothing of interest except that one brother died of "bronchial" trouble. The patient himself had had severe constipation all his life. He had headaches until six years before admission, when they ceased. He took an occasional glass of beer and whiskey until prohibition, when he stopped. During the present illness he had had some shortness of breath. For the past six months he had occasionally urinated once at night. His usual weight was 144 pounds, his present weight 115.

Records of the Consultation Clinic March 24, two weeks before admission, showed the history given above except for the statement "no vomiting until the past week". X-ray showed the stomach low, atonic and markedly dilated. Peristalsis was deep and active. There was complete retention from the motor meal at the end of six hours. The stomach contained also a quantity of food remnants and secretion. None of the barium was seen to leave the stomach during the examination. The pyloric sphincter and duodenum could not be visualized.

Examination showed a poorly nourished, almost emaciated old man with marked barrel chest, the chest being flattened laterally. There was moderate kyphosis involving all the dorsal vertebrae, and slight right lateral scoliosis. There was dullness between the scapulae from the fourth to the eighth ribs, marked on the right, moderate on the left. The rest of the chest was hyperresonant. The breath sounds were distant. There were no râles. The location of the apex impulse of the heart is not recorded. There was no enlargement to percussion. No abnormalities of the heart are recorded. The radial arteries were thickened, the radials and temporals thickened and tortuous. The blood pressure was 140/95. The epigastric region was prominent and showed some tenderness throughout, and marked voluntary spasm, making deep palpation impossible. Rectal examination showed several external hemorrhoids. The sphincter was very light and extremely tender. The prostate could not be satisfactorily felt on account of the extreme tenderness. The right testicle was enlarged, with hydrocele fluid fluctuant in the lower pole, firm in the upper. The pupils were normal. The knee-jerks were diminished.

Before operation the urine was slightly cloudy, specific gravity 1.007, sediment negative. Blood examination showed 13,600 leucocytes, 86 per cent. polynuclears, hemoglobin 75 per cent., 4,240,000 reds, smear normal. The Wassermann is not recorded. Gastric analysis: fasting contents, 45 cubic centimeters of grayish-white fluid, free acid 9, combined acid 17. Test meal, 110 cubic centimeters, free acid 31, combined acid 11. Guaiac negative in both. Microscopic examination shows rare red blood corpuscles and starch granules.

April 9 operation was done. The following day the patient had some hiccup and in the evening vomited some old blood. The stomach was washed with good results. He was given a subpectoral; nothing by mouth. April 11 he was feeling well, with no nausea or vomiting. April 11 and 12 he was given the first day gastric diet,* April 13 the second day diet, April 14 the third day diet. April 14 he had some hiccup, which continued for the next six days. April 20 it was better. April 16 he was given the fourth day gastric diet. The diet was continued, slowly but steadily increased. April 22 he was out of bed, feeling very well. At noon he began to vomit. The stomach was washed in the afternoon with the recovery of eighteen ounces and complete relief of the vomiting. The wound was clean and healed. The patient was looking thinner every day. The afternoon of the 23rd he vomited. A stomach wash gave two liters of fluid. That evening he was failing rapidly. He complained of pain in the left thorax and "thumping" of his heart. The pulse was weak and rapid but perfectly regular. There were a few coarse râles at the bases. At midnight he died.

*GASTRIC DIET

First day.		One and a half ounces boiled milk, one and a half ounces cream, every hour from 7 to 9.
Second day.		Six ounces of gruel alternating with milk and cream mixture; a feeding every hour from 7 to 7.
Third day.	7 a. m.	Cereal with sugar and twenty per cent. cream two ounces. Half a glass of milk. One slice of toast buttered and softened with milk.
	9 a. m.	Six ounces of gruel.
	11 a. m.	Milk, cocoa or malted milk six ounces. Two crackers.
	1 p. m.	Creamed soup six ounces. Scraped beef or minced chicken one and a half ounces. One slice buttered toast. Custard or plain ice cream.
	3 p. m.	Six ounces of gruel.
	5 p. m.	Six ounces creamed soup. One egg soft cooked or dropped. Two slices of toast. Simple pudding as blanc mange or plain rice custard.
	8 p. m.	Glass of milk. Two crackers.
Fourth day.	Breakfast.	Cooked cereal with sugar and cream. One soft cooked or dropped egg. One slice buttered toast. One glass milk.
	10:30 a. m.	Milk, cocoa, malted milk or eggnog six ounces. Two crackers.
	Dinner.	Chicken broth. Scraped beef. Chicken fricassee or minced chicken. Baked or mashed potato. One slice bread and butter. Custard or plain ice cream. One glass of milk.
	3-4 p. m.	Six ounces of milk. Two crackers.
	Supper.	Six ounces of creamed soup. Rice or macaroni. One slice of buttered toast or milk toast. Cream whip or simple pudding.
	9 p. m.	Milk, cocoa or malted milk six ounces.

Discussion

BY EDWARD L. YOUNG, JR., M.D.

If we disregard this patient's age we have here a very definite story pointing toward ulcer. It is more common to have a story of symptoms lasting longer than this in ulcer and a story of about this length of time and even less in cancer. All symptoms have to start sometime and there is no reason, now that we have started out with this amount of severity, why we should not get ulcer patients with a story no longer than this. But when we consider his age we are at once prejudiced in favor of a malignant process, because at sixty-three ulcer symptoms do not so commonly start as they do earlier in life.

Could it be anything but ulcer or cancer? With as clean cut a story as this it is hard to consider disease of the biliary tract or any other disease outside of stomach or duodenum. We often comment on the fact that disease of the colon, that is to say cancer, will ofttimes give stomach symptoms, but never so definite as are here presented.

His loss of weight is considerable, twenty-nine pounds, but not more than is consistent with either diagnosis.

The X-ray localizes the disease in the intestinal tract.

The general examination shows that he is not in very good condition.

The spasm if voluntary is not important, but if there is a certain amount of true spasm present I think it always means peritoneal irritation, and that suggests the fact that whether ulcer or cancer the process has extended through to the serous coat. The examination otherwise is not particularly important in its bearing on the case.

Both the fasting contents and the test meal show both free and combined acid. In so far as it goes that is against malignant disease.

To size up the situation, we have here a man in early old age, with considerable loss of weight, not too good general condition and yet nothing to contraindicate operation, who has got either ulcer or cancer at the pylorus. If we can take the X-ray as being entirely correct that the stomach is free of disease up to the pylorus the diagnosis then is ulcer, because carcinoma does not occur beyond the pylorus, so that if we put the faith that we ought to be able to in this examination, duodenal ulcer with pyloric obstruction is the first diagnosis, carcinoma to be considered in the back of our mind.

The treatment is first operation, to see if palpation of the lesion itself will give a more accurate diagnosis, and then, depending on what and how extensive it is, either simple posterior gastro-enterostomy or nothing at all if it is an extensive carcinoma. It would seem as though the gastro-enterostomy would be the operation of choice.

X-RAY INTERPRETATION

The findings are those of a lesion at the outlet of the stomach with marked obstruction.

DR. YOUNG'S PRE-OPERATIVE DIAGNOSIS

Duodenal ulcer.
Pyloric carcinoma??

PRE-OPERATIVE DIAGNOSIS

Duodenal ulcer.

OPERATION

Gas and ether. An incision was made just to the left of the median line in the upper abdomen. The stomach was somewhat dilated. At the pyloric end was a firm tumor involving the pyloric ring, making a mass three centimeters in diameter. This tumor was practically on the duodenal side of the pylorus and caused a puckering of the anterior surface of the duodenum which felt like carcinoma, but on account of its situation and appearance it was thought to be ulcer. It was partly dissected up from below, and edema and adherence to the pancreas still suggested ulcer. A posterior gastro-enterostomy was done from right to left.

Further Discussion

The operation bears out our reasoning. The surgeon apparently argued as we have and did a side tracking operation.

The story following the operation is one that is not unusual in this disease. The evidence we have some time after operation is that the stomach was not working well for some reason or other. Two weeks after operation when he had been up and about he had a stomach content of two liters. It sometimes takes a long time to get a patient going along on an even keel after a gastro-enterostomy, and with this patient the advisability of doing anything more was certainly very doubtful.

The course following the last upset was very rapid. I do not know what Dr. Richardson is going to find. He might of course tell us that this whole process was malignant. It is too late for a death from sepsis following operation, and the autopsy will probably tell us that the patient simply petered out, not having strength to carry on.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Duodenal ulcer, obstructing.
Malnutrition.
Operation, posterior gastro-enterostomy.

DR. EDWARD L. YOUNG'S DIAGNOSIS

Ulcer of the duodenum.
Gastro-enterostomy.

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesion*

Ulcer of the duodenum.

2. *Secondary or terminal lesions.*

Gastro-enterostomy.
Hypostatic pneumonia.
Edema of the lungs.
Fibrinopurulent pleuritis.

3. *Historical landmarks*

Chronic pleuritis.
Obsolete tuberculosis of the bronchial glands.
Foci of obsolete tuberculosis, apices of the lungs.
Chronic peritonitis.
Emaciation.
Chronic adhesive pericarditis.
Arteriosclerosis.
Cysts of the kidneys.
Hydrocele, right.

DR. RICHARDSON: Trunk. Skin and mucous membranes pale. From the ensiform downward there was a linear scar 18 centimeters long. Suture marks were still visible. The abdomen was hollow. There was subcutaneous fat in minute amount. The muscles were thin, pale and soft. The subcutaneous tissues were dry.

The peritoneal cavity contained no fluid. There were old adhesions between the transverse colon and the parietal peritoneum at the base of the operation scar, and a few old adhesions between the ileum and the cecum.

Stomach. A posterior gastro-enterostomy was established and was in good condition. The stomach otherwise was negative except that the pylorus showed considerable constriction.

Small intestine. At a point in the wall of the duodenum just below the pylorus anterolaterally to the right there was a loss of substance two centimeters across. The margins were irregular, rounded and descended to a smooth grayish base. On the peritoneal surface opposite the base of the ulcer there was a patch of old adhesions. The first portion of the jejunum was anastomosed to the stomach by the posterior route.

Pleural cavities. Right, a small amount of thin fibrinopurulent material. Left, negative. There were a few pleural adhesions at the right apex and some to the pericardium. On the left the lung was bound down by old adhesions.

The bronchial glands were slightly enlarged, pigmented and several of them showed areas of obsolete tuberculosis.

The right lung showed a small mass of obsolete tuberculosis at the apex. The upper and middle lobes showed no areas of consolidation. The lower half of the lower lobe showed frank hypostatic pneumonia with fibrinopurulent pleuritis. The apex of the left lung showed a small mass of obsolete tuberculosis. The upper lobe showed no areas of consolidation. The lower lobe in the region of the lower part showed some hypostatic pneumonia. The tissue of the lungs generally showed moderate edema.

The pericardium contained no fluid. There were many scattered old bands of adhesions extending between the two layers.

The heart weighed 300 grams. The myocardium, valves and cavities were negative. The coronaries were free, capacious, and showed a slight amount of fibrous sclerosis. The aorta above the diaphragm showed a slight amount of fibrous sclerosis. In the abdominal portion there was a moderate amount of fibrous sclerosis with scattered calcareous areas and areas of atheroma. The great branches showed a slight amount of fibrous sclerosis.

The spleen was small but otherwise negative.

The adrenals and kidneys were negative except that in the right kidney there was a cyst three centimeters in diameter and in the left kidney two small ones. These cysts contained thin clear pale fluid. The surfaces were smooth and the walls were thin and membranous.

On the right side there was a hydrocele about 9 by 5 centimeters in diameter.

A case of ulcer of the duodenum, with hypostatic pneumonia.

DR. YOUNG: Does this really come down to the fact that he did not have strength enough to see it through and really petered out?

DR. RICHARDSON: In his condition of course the terminal pneumonia was more than he could combat.

CASE 12403

UNUSUAL MANIFESTATIONS OF AN INFECTION SHOWING ITSELF FIRST IN THE THROAT

SURGICAL DEPARTMENT

A sixteen-year-old girl was admitted March 15. A month before admission she noticed about the ankles a little swelling, which had gradually increased. Two weeks before admission her mother noticed that her face looked puffy. This also had increased. For the past week she had felt very tired even though she did no housework. She complained also of numbness in her feet after sitting for some time. The week before admission a physician put her on a vegetable diet with no meat. She stayed in bed five days without relief. During the past week she had been somewhat dyspneic on exertion and at times had been conscious of forceful heart beats. These were her only complaints. She knew of no urinary symptoms. She said her present and best weight was 136 pounds. She said she had

gained eleven pounds in three weeks and twenty-two pounds in two months. These figures were doubted. The present weight however was verified in the ward.

Her family history was unimportant. Her past history was negative except for scarlet fever at eleven and irregular catamenia every two or three weeks with flowing for three to ten days.

Examination showed a moderately well developed and nourished girl, obviously acutely ill. There was well marked puffiness of the upper and lower eyelids, as well as the whole face. There were several carious teeth. There was pyorrhea. The throat was markedly congested and granular in appearance. Both tonsils were greatly enlarged and cryptic, with pockets of yellowish exudate in each, especially noted in the right. The lungs were essentially clear. The apex impulse of the heart is not recorded. The left border of dullness was 8 centimeters from midsternum, one centimeter inside the midclavicular line. There was no enlargement. A long rough presystolic murmur was heard leading to a sharp first sound at the apex. The pulmonic second sound and the aortic second were both accentuated. The aortic second was greater than the pulmonic. The blood pressure was 135/85—145/88. The abdomen was hyperesthetic but showed no definite tenderness. The abdominal wall was boggy with edema. No definite free fluid was made out. Pelvic examination showed a marital introitus, moderate vaginal discharge. The cervix was smooth and firm. The fundus was in normal position, tender. No masses were made out. The extremities showed marked edema. The pupils and reflexes were normal.

Before operation the urine was cloudy or smoky at eight of twelve examinations, red at one, specific gravity 1.020 to 1.040, a trace to a large trace of albumin at all examinations. Sediment loaded with pus cells at seven examinations, including one catheterized specimen, many pus cells at two, a few at one; red cells at ten, many at one. Renal function March 15 30 per cent., March 22 25 per cent., March 29 50 per cent. Culture from the catheterized specimen negative. March 22 non-protein nitrogen 37 mgm., uric acid 4.4, March 29 non-protein nitrogen 50 mgm., uric acid 6.7, blood calcium 10.5, blood phosphate 5.4, chlorides 566. The blood showed 8,800 to 20,200 leucocytes, 80 per cent. polynuclears, hemoglobin 70 per cent., 4,600,000 to 4,710,000 reds, very slight achromia, no variation in size, shape or staining, platelets normal. Wassermann negative.

X-ray. Neither kidney shadow could be definitely identified. Overlying the transverse process of the third lumbar vertebra on the right and just above the right sacro-iliac joint were several irregular shadows of increased density which had the appearance of a chain of calcified glands. The very small shadows of increased density in the right renal area were believed to be artefacts. No shadows were visible which were characteristic of calculi.

One examiner found the heart very slightly enlarged to the left and heard a systolic murmur. By March 20 the edema was disappearing under medical treatment, milk diet followed by low salt soft solid diet, with limited fluids and magnesium sulphate. The temperature was 96.5° to 99.4°, the pulse 60 to 90 until April 1, when they rose to 102.8° and 112 respectively. The patient had a chill with sweating and vomiting. The respirations continued normal.

April 2 operation was done. The following morning the temperature was 104°, the pulse 110, and the patient looked very ill. The abdomen was rigid. There was profuse discharge. Subpectorals were not absorbed. She took some fluids by mouth. The edema increased. She failed steadily and April 4 died.

Discussion

BY EDWARD L. YOUNG, JR., M.D.

The suggestion from edema which is generalized, in the feet and in the face, is of damage in the cardiorenal system somewhere, either alone or, as always takes place sooner or later, in combination.

Rapid gain in weight is of course consistent with the increasing edema, which is more than we would expect with anemia.

Scarlet fever, even though there is no record of following nephritis, may have left some kidney damage which is now showing itself in an acute flare-up.

The evidence of trouble in the tonsils may be the starting point of trouble in the present attack, because it often happens that an acute infection, particularly in the tonsils, is the cause of an acute onset of nephritis.

The examination is essentially normal except for the evidence of some cardiac damage, as shown by the presystolic murmur, the accentuated aortic second sound and the slight increase of blood pressure.

The blood chemistry shows some nitrogen retention, which is the only thing that is really important. Of course the presence of pus in the urine during an acute nephritis does not in the slightest necessitate the background of surgical damage. The pus may be due to the nephritis alone.

The blood shows no more anemia than she is entitled to.

It seems to me on the evidence we have here that the medical treatment was getting results. There certainly is no evidence of any surgical background of damage in the kidneys. There may be, but we have not got the evidence for it.

The only thing we can say on the evidence we have in the record is that although the rise of temperature and pulse with sweating and vomiting may mean an acute intra-abdominal condition we have no evidence of an examination, so that when it says "operation" all we can do is to ask what examination shows. I think we are entitled to ask what the physical examination showed as to the possible spot of localization that might have caused this chill and vomiting and temperature.

Miss Painter: The record gives nothing except the request for surgical consultations with a medical note of "acute abdomen". Two surgical consultants advised operation.

Dr. Young: The only thing we have to say on that basis is that on the theory of chances alone acute appendicitis is to be thought of first. Otherwise we are entirely in the dark, as the examination of the patient would tell more than anything that we have at hand.

DR. YOUNG'S PRE-OPERATIVE DIAGNOSIS

"Acute abdomen".
Possibly acute appendicitis.

PRE-OPERATIVE DIAGNOSIS

General peritonitis.

OPERATION

Ethylene. Midline lower abdominal incision. On opening the peritoneum a large amount of fluid escaped, in appearance somewhat like that of chylous ascites. On further exploration purulent fluid welled up from the pelvis. A certain amount of this was wiped out. The tubes and ovaries were soft. The tubes were irritated but did not show any abscess formation. The appendix was normal. No further exploration was made as to the cause of the abdominal exudate. Two cigarette drains were placed to the pelvis and the wound was closed in layers.

Further Discussion

The fact that it is a peritonitis is borne out by the findings at operation, but we are still in the dark as to where this started. It can be a metastatic thing from the same infection which originally lighted up the nephritis, the so-called idiopathic peritonitis.

Miss Painter: The operating surgeon's post-operative diagnosis was general peritonitis, idiopathic.

Dr. Young: Following the operation the process apparently went on, certainly not improved by operation, and she died of this infection.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Acute nephritis.
Streptococcus peritonitis.
Exploratory laparotomy with drainage of pelvis for general peritonitis.

DR. EDWARD L. YOUNG'S DIAGNOSIS

Acute glomerulonephritis.
Streptococcus peritonitis.
Streptococcus septicemia.

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesions*

(Acute tonsillitis.)
Subacute glomerulonephritis.
General peritonitis.

2. *Secondary or terminal lesions*

Septicemia, streptococcus hemolyticus.
Empyema, right.
Fibrinous pleuritis, left.
Soft hyperplastic spleen.
Edema of the extremities.
Hypertrophy and dilatation of the heart.
Congestion of the lungs.

3. *Historical landmarks*

Operation wound.
Slight chronic pleuritis, left.
Obsolete tuberculosis of the mesenteric lymph glands.

Dr. Richardson: The head was not examined.

Trunk. The abdomen was not distended, wall soft. The lower extremities pitted on pressure and the hands were puffy.

The peritoneal cavity contained a small amount of purulent fluid material and the peritoneum generally showed areas of dirty reddish discoloration and was coated with fibrinopurulent material. There were several slightly enlarged mesenteric glands which showed much fibrocalcareous degeneration.

The right pleural cavity was half full of thin purulent fluid. The left contained a few cubic centimeters of cloudy fluid and fibrin. There were no old adhesions on the right, and only one band to the diaphragm on the left.

The lungs showed much congestion but no areas of consolidation. The right pleura was coated with thin pus and on the left side the pleura over the lower half of the lung was coated with fibrinous exudate.

The heart weighed 260 grams,—slightly enlarged for her. The myocardium, valves, cavities and coronaries were negative.

The spleen weighed 200 grams, slightly enlarged. The tissue was very mushy.

The combined weight of the kidneys was 550 grams, much enlarged. The organs macroscopically and microscopically showed a well marked subacute glomerulonephritis. The pelves, ureters, bladder and uterus and adnexa negative.

The culture from the heart blood yielded a typical growth of the streptococcus hemolyticus.

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THE HUMAN REPAIR BILL

It has been estimated that the repair of the ravages of disease in this country certainly costs more than one billion dollars each year; how much more no one attempts to estimate.

One great factor in this great economic loss is the indifference of most individuals with respect to the hazards of life. Everybody recognizes the wisdom shown by those who are trying to diminish the spectacular accidents due to vehicular transportation, but the people at large pay scant attention to the care of their bodies until some pain or disability exists. Some of the simpler rules of living, such as avoidance of those foods which cause inconvenience, or the cultivation of habits which promote comfort, are adopted by the majority, but it is only a small minority who regard the human body as a wonderful machine requiring vastly more study than the most intricate product of man's inventive genius. Few appeal to the doctor for the ailments which have indefinite symptoms but those derangements of functions which are not compelling may be and indeed often are specific warnings of disaster. Furthermore, some organic diseases not infrequently progress beyond the remedial stage before suspicion is aroused.

Most people possessing a hundred dollar watch will have proper care given to it. Few people will put their bodies under scrutiny when in apparent health, but scientific investigation is sufficiently well advanced so that the effect of improper habits of life or hereditary influences may be modified to the end that illness may be prevented or at least postponed.

We have a few physicians who are far sighted enough to train themselves to be competent to detect morbid tendencies and give appropriate advice but there is almost as much indifference on the part of the profession as exists in the laity with respect to the regular and careful study of individuals who have not been led to seek advice because of some apparent or feared disorder.

It may be that the greatest advance in preventive medicine will come through the education of more doctors who can appreciate and detect obscure evidences of abnormal physical and mental states and prescribe the appropriate remedies.

Diseases with known pathology or clinical symptoms which compel attention are of more interest to the average practitioner.

The adoption of a general custom which prompts the doctor to feel responsibility for the health of every person who comes under his care would count for much in the campaign against disease. Perhaps the time will come when the surgeon or other specialist will ask his patients if they are under the care of a doctor who makes a study of them at regular intervals. These men should be general practitioners but of a different type from the average doctor of a preceding generation and must be the product of a medical school and hospital of an advanced type or one who has given much time to post-graduate study.

The people will when sufficiently educated welcome an inventory of health and not forsake such practitioners for naprapaths and manipulators. The demands of the present day include that type of doctor who will preach the doctrine of preventive medicine through careful and regularly repeated study of individuals.

ACCIDENTS IN INDUSTRY

It has been stated by Mr. J. J. Davis the Secretary of Labor for this country, that fatal industrial accidents here number no fewer than 2,300 a year, and that non-fatal accidents reach the appalling total of 2,500,000 annually. Moreover, these accidents, of which 85 per cent. are said to be preventable, cost in loss of wages over a billion dollars a year and a loss of labor amounting to 227,169,000 days yearly. In British industries in 1925 there were 944 fatal accidents and 159,693 accidents in all. Among the industries contributing the largest number of fatal accidents, building operations come first

with 142, dockers next with 93, shipbuilding 84, metal conversion and iron and steel totalling 70. It is contended that the majority of accidents are due to failure on the part of the human subject and that although safeguards have reduced the rate of accidents, the tendency to these was largely a question of psychology. Close and careful investigations have proved that the average number of accidents is influenced greatly by a comparatively small number of workmen. Numerous inquiries have brought out the fact that many more accidents occur during the early days of new work than after a year's employment, and that it is owing to the custom of putting "square pegs into round holes" that there is such a holocaust of deaths and injuries. Taking into consideration the dangers arising from youth and inexperience it might be well worth while both on economic and humanitarian grounds to consider seriously the suggestion to give new employees a preliminary week or two weeks of training on machines with which they can neither harm themselves nor their fellow workmen.

The British National Institute of Industrial Psychology has been carrying out recently investigations in this direction. Standardized tests of efficiency have been applied to find out whether a beginner is capable of learning his work properly and whether he shall be retained or dismissed, and with the purpose of separating novices and learners of promise into two groups. The results were instructive and valuable. The average accident frequency rate per 1,000 hours of learners who were retained was 1.2 for a group of 79, and for the group of 61 who were dismissed it was 2.45, or more than twice the rate of accidents of those who were retained. These and other investigations seem to confirm the belief that susceptibility to accident can be detected by tests. The present day hit-or-miss method of engaging new workers irrespective of any knowledge of their suitability for a particular employment is reflected in heavy economic losses and in an excessive accident and sickness incidence. The cost, as said before, is both economic and humanitarian, for the inexperienced and psychologically unfit class of workers is a danger to himself and to other workers. The efficiency of a whole working staff may be reduced by accidents to one or two hands. This is a medical and especially a psychological problem, and employers are beginning to fully grasp this point. It is to the interest of all that workers shall be healthy and adapted for their work. Not only is it desirable, even essential that vocational aptitude should be tested before a youth is taken as a worker, but every effort should be put forth to maintain him in good health during employment and to care for him medically and otherwise when sick, injured, or in convalescence.

In industry there is a wide scope for the services of medical men to select applicants and to keep them in good health. Prevention and treatment of industrial disease and injuries are most important branches of the medical practice of today and will become more important as time goes on.

THE MATERNITY ACT

THE Children's Bureau is actively at work to extend the operation of the Maternity Act which under the present law will expire by limitation June 30, 1927.

The House passed a bill to extend this period for two years expiring June 30, 1929.

The Senate Committee recommended that the period be extended one year. No action was taken and the matter will come up at the next session of Congress.

The Children's Bureau has been sending literature all over the country. Many extravagant claims have been made with respect to the benefits secured under the operation of this act. The sponsors of the Maternity Act are opposed to the suggested transfer of the functions created by the act to the Public Health Service. They prefer to have the act die by limitation rather than to have it put under the United States Public Health Service. Dr. L. L. Lumsden of the Public Health Service believes that health matters should be under the control of local health administrators.

We have taken the position that every state should assume responsibility for local health conditions always recognizing that there are certain federal responsibilities relating to the country at large.

The federal government should we believe be ready to assist in educational campaigns but so far as possible leave executive duties to local authorities. We are opposed to a bribe in the form in which it appears in the Maternity Act. If states are not alive to their responsibilities pressure should be brought to bear through publicity. We believe that each state can and will take care of its own problems if shown the need of special activities.

If physicians have any real interest for or against the proposed extension of the Maternity Act advantage should be taken of the opportunity to communicate with members of Congress.

DIATHERMY IN THE TREATMENT OF PNEUMONIA

ALTHOUGH increasing attention is being given to the use of diathermy in treating many diseases the assertions with respect to its value in pneumonia and many other conditions are especially interesting.

Dr. H. Eaton Stewart of New Haven, U. S. A.,

delivered an address before the Section of Electro-Therapeutics of the Royal Society of Medicine in May. He has been working with this agent since 1921. He reported unexpected efficiency in the treatment of pneumonia by this method and also that the hospitals in New York are getting remarkable results. He claims that diathermy properly applied will reduce the mortality due to pneumonia about fifty per cent.

Dr. McFee of Haverhill read a paper before a section of the Massachusetts Medical Society at its recent meeting in Springfield and claimed to have had equally good results. Other workers are enthusiastic. So far as we have been informed very little attention has been given to the use of diathermy in the treatment of pneumonia in Boston.

The proper place for a scientific study of this treatment is in a large hospital where series of cases with controls are available. If the claims now being made are sound, pneumonia patients should have the benefits which may be secured by the use of diathermy. Those who are enthusiastic with respect to this treatment feel that many lives can be saved. Will not our large hospitals enter upon this study and give the profession full information?

SIR WILLIAM ABUTHNUT LANE IN CONFLICT WITH THE BRITISH MEDICAL ASSOCIATION

THE *New York Times* reports that Sir William Abuthnut Lane has resigned from the British Medical Association because of a demand made by the Association that he make adequate explanation of the use of his name in a menu recently issued by a chain of restaurants. According to the dispatch a photograph of Dr. Lane appeared on the menu together with an article entitled "Athletes Diet." The suggestion is made that Dr. Lane would like to educate the public along lines which are in vogue in the United States. There are differences of opinion here as to ethical behavior in connection with publicity and some of our prominent men have been mildly rebuked. The difficulty often seems to lie in the place or nature of the publicity rather than in any selfish motive of the doctor in question. It would seem altogether unlikely that Dr. Lane would have any desire for the advertising feature of publicity in securing patients.

PECULIAR OLFACTORY ORGANS

TESTIMONY submitted by a physician in the examination of a Lynn police officer whose behavior was under investigation, according to published reports, set forth that one may not be able to differentiate the odor of chewing tobacco and alcohol in the breath of a person.

The name of this physician does not appear in the directory of the Massachusetts Medical Society. This doctor's practice may have been confined to those who use neither of these materials. Perhaps inspection of the oral cavity might be of assistance in arriving at a conclusion. Other observers testified to behavior by the accused which is not usually attributed to the effect of tobacco. This doctor may be popular as an expert when persons suspected of being under the influence of alcohol are arrested. If the contention holds good those who drive automobiles and use alcoholic liquors had better combine chewing tobacco with the drink.

THIS WEEK'S ISSUE

CONTAINS articles by the following authors:

BARRETT, ALBERT M., A.B.; M.D. University of Iowa 1895. Professor of Psychiatry University of Michigan and Director State Psychopathic Hospital, Ann Arbor, Michigan; Member American Neurological Association; American Psychopathological Association; American Psychiatric Association; Central Neuro-Psychiatric Association; Detroit Society Neurology and Psychiatry; Association for Research in Mental and Nervous Diseases and Member Medical Council U. S. Veterans' Bureau. His subject is "The Significance of Constitutional Factors in Genetic Relations of the Psychoses," page 697. Address: 630 Oxford Rd., Ann Arbor, Michigan.

REYNOLDS, GEORGE P., A.B.; M.D. Harvard Medical School 1924. Assistant Resident in Medicine Johns Hopkins Hospital. His subject is "Hysterical Paraplegia: A Case of Many Years' Duration, Responding Well to Treatment," page 704. Address: Massachusetts General Hospital, Boston.

HYMAN, ALBERT S., A.B.; M.D. Harvard Medical School 1918. Director Witkin Foundation for the Study and Prevention of Heart Disease; Associate Cardiologist Beth David Hospital; Chief Cardiac Clinic, Beth David Dispensary; Cardiologist to Harlem Day and Night Nursery, New York City; President American Cardiological Society. His subject is "A Clock for the Cardiac Clinic," page 707. Address: 1175 Park Avenue, New York City.

HUBER, EDWARD G. Detailed Record on Page 291, No. 6, Vol. 195. Continued article on "The Control of Communicable Diseases Prevalent in Massachusetts." page 709. Address: War Dept., Washington, D. C.

HAWES, JOHN B., 2ND., A.B.; M.D. Harvard Medical School 1903. President Boston Tuberculosis Association; Consultant for Diseases of Lungs, U. S. Veterans' Bureau Dist. No. 1. He writes on "Progress in Tuberculosis," page 715. Address: 11 Marlborough St., Boston.

MISCELLANY

A CORRECTION

THE new Medical Arts Building, Worcester, Massachusetts, is a ten story building. The printer reduced the number of stories to very small proportions. The original text was taken from a Worcester publication.

INFLUENZA

WITH regard to this winter's officially predicted influenza: how are you planning to make "forewarned is forearmed" come true?

This question appeared in one of the daily papers. While no one may be guaranteed against this invasion of influenza the ordinary health precautions so often stressed in advice to the public apply.

If everybody would prepare for this danger by carefully panning the daily routine of life especially avoiding dietary errors and devoting a reasonable amount of time to rest and moderate exercise the number of cases might be reduced.

With the advent of cooler weather especial attention should be given to abundant ventilation of houses with avoidance of high temperatures and as soon as reports indicate the presence of the disease it is wise to refrain attendance upon places where people congregate.

Workers in shops and factories should walk to and fro rather than use public conveyances if this custom does not consume too much time and energy.

If doctors will generally preach to their patients, taking preventive medicines as the text, the next epidemic will find its victims chiefly among those who are suffering with damaged organs.

CASES REPORTED TO MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH FOR SEPTEMBER, 1926

Anterior poliomyelitis	59	Ophthalmia neonatorum	109
Anthrax	1	Pellagra	2
Chickenpox	71	Pneumonia, lobar	112
Diphtheria	165	Scarlet fever	280
Dog-bite requiring anti-rabic treatment	29	Septic sore throat	6
Dysentery	3	Suppurative conjunctivitis	21
Encephalitis lethargica	5	Syphilis	125
Epidemic cerebrospinal meningitis	9	Tetanus	2
German measles	21	Trachoma	4
Gonorrhea	450	Trichinosis	2
Influenza	20	Tuberculosis, pulmonary	352
Malaria	3	Tuberculosis, other forms	79
Measles	72	Tuberculosis, hilum	25
Mumps	103	Typhoid fever	48
		Whooping cough	358

RESUME OF COMMUNICABLE DISEASES

AUGUST, 1926

GENERAL PREVALENCE

There were no communicable diseases which showed an increase over last month.

Anterior poliomyelitis was reported from Blandford, 1; Boston, 3; Everett, 2; Fall River, 1; Gardner, 2; Lawrence, 1; Leominster, 1; Lowell, 2; Lynn, 1; Ludlow, 1; Mattapoisett, 1; Melrose, 1; Newton, 3; North Attleboro, 1; Northboro, 1; Palmer, 1; Saugus, 1; Sherborn, 1; Somerville, 3; Springfield, 24; Taunton, 1; Westfield, 1; Westford, 1; Worcester, 13; Woburn, 2; total, 75.

Dog bite was reported from Amesbury, 1; Billerica, 2; Boston, 3; Cambridge, 1; Chelsea, 4; Holyoke, 1; Lowell, 14; Marblehead, 1; Peabody, 4; Revere, 4; Salem, 1; Springfield, 1; Swampscott, 3; Winthrop, 3; total, 43.

Dysentery was reported from Boston, 1; Lawrence, 1; total, 2.

Encephalitis lethargica was reported from Belmont, 1; Brookline, 1; Cambridge, 1; Everett, 1; Marblehead, 1; Plainville, 1; Worcester, 1; total, 7.

Anthrax was reported from Peabody, 1; total, 1.

Epidemic cerebrospinal meningitis was reported from Boston, 1; Fall River, 1; Worcester, 1; total, 3.

Malaria was reported from Boston, 1; Everett, 1; Malden, 2; total 4.

Pellagra was reported from Acushnet, 1; Leominster, 1; total, 2.

Rabies was reported from Palmer, 1; total 1.

Septic sore throat was reported from Boston, 7; Fall River, 1; Haverhill, 1; Lynn, 1; Melrose, 2; total, 12.

Tetanus was reported from Boston, 3; Lowell, 1; Methuen, 1; New Bedford, 1; total, 6.

Trachoma was reported from Boston, 1; Cambridge, 1; Newburyport, 1; Springfield, 1; total, 4.

Trichinosis was reported from Boston, 1; total, 1.

DISTRIBUTION

All Communicable Diseases

	August, 1926	August, 1925
Total cases (all causes)	3,009	2,970
Case rate per 100,000 population	71.4	71.4

Certain Prevalent Diseases

Diphtheria	August, 1926	August, 1925
Total cases	127	200
Case rate per 100,000 population	3.0	4.8

Measles	August, 1926	August, 1925
Total cases	200	338
Case rate per 100,000 population	4.7	8.1

Cases in cities and towns that have noticeably exceeded their median endemic indexes*:

Southhampton	15	Stockbridge	14

Scarlet Fever	August, 1926	August, 1925
Total cases	290	179
Case rate per 100,000 population	6.9	4.3

Cases in cities and towns that have noticeably exceeded their median endemic indexes*:

Winchendon	9	Quincy	11
Westboro	11	Lynn	21

Tuberculosis, Pulmonary	August, 1926	August, 1925
Total cases	472	386
Case rate per 100,000 population	11.2	9.3

Tuberculosis, Other Forms	August, 1926	August, 1925
Total cases	80	44
Case rate per 100,000 population	1.9	1.0

Typhoid Fever	August, 1926	August, 1925
Total cases	74	69
Case rate per 100,000 population	1.8	1.6

Whooping Cough	August, 1926	August, 1925
Total cases	430	600
Case rate per 100,000 population	10.2	14.4

Cases in cities and towns that have noticeably exceeded their median endemic indexes*:

Arlington	10	Westboro	11
Northampton	10	Winchester	12
Waltham	16		

*The median endemic index is obtained by arranging in arithmetical sequence the monthly totals of reported cases for the past 5 years and selecting the middle figure.

CONNECTICUT DEPARTMENT OF HEALTH

MORBIDITY REPORT FOR THE WEEK ENDING SEPTEMBER 18, 1926

Diphtheria	8	Chickenpox	3
Last week	8	German measles	1
Diphtheria bacilli carriers	4	Influenza	2
Scarlet fever	17	Malaria	1
Last week	19	Mumps	3
Typhoid fever	8	Pneumonia, lobar	15
Last week	9	Poliomyelitis	2
Measles	2	Septic sore throat	1
Last week	6	Tuberculosis, pulmonary	29
Whooping cough	17	Tuberculosis, other forms	1
Last week	23	Gonorrhea	16
Bronchopneumonia	11	Syphilis	10
Cerebrospinal meningitis	1		

NEWS ITEMS

TUFTS COLLEGE MEDICAL SCHOOL—Registration for the first year class was held on Monday, September 20, and totaled 150 students.

In accordance with the annual custom a reception was given the freshman class by the medical faculty on Monday evening, September 20. There were short addresses by President Cousens and Dean Rushmore.

Registration for the three upper classes was conducted on Tuesday, September 21. The registration for the second year class is 124 students, third year class 106 students, fourth year class 114 students, making a total enrollment for the session 1926-1927 of 493 students.

THE CANCER FUND—The total subscribed for the million dollar cancer fund to be used by the American Society for the contest of cancer is $426,647, as reported at a luncheon given by Winthrop W. Aldrich, chairman of the management committee, to 30 members of the Society of the Downtown Associations, September 27.

REPORTS AND NOTICES OF MEETINGS

MIDDLESEX NORTH MEDICAL SOCIETY

THE quarterly meeting of the Middlesex North Medical Society will be held on Wed., October 20, 1926, at the Essex Sanatorium in joint meeting with Essex North and South and Middlesex East. The meeting will begin at two o'clock and a very interesting program has been arranged.

T. A. STAMAS, *Secretary.*

MIDDLESEX SOUTH DISTRICT MEDICAL SOCIETY

THE semi-annual meeting of the Middlesex South District of the Massachusetts Medical Society will be held at the Colonial Club, 20 Quincy street, Cambridge, on Wednesday, Oct. 13, at 11:30 A. M. The semi-annual paper will be read by Dr. Louis E. Phaneus, Boston. Subject: "Uterine Prolapse and Its Treatment," Lantern Slides. Luncheon will be served at 1 o'clock.

STEPHEN M. BIDDLE, *Secretary,*
885 Massachusetts Ave.,
Cambridge, Mass.

THE PHYSIOLOGICAL CONFERENCE

THE next Physiological Conference will be held in the Bowditch Library of the Harvard Medical School on Thursday, October 7, at 4 P. M.

Dr. Alexander Forbes and Dr. Edwin J. Cohn will speak on "The International Physiological Congress at Stockholm."

RUTH TYLER, *Secretary.*

DR. PRINCE TO LECTURE IN CLINICAL, ABNORMAL, AND DYNAMIC PSYCHOLOGY

Dr. Morton Prince, eminent psychologist and associate professor of psychology at Harvard University, began Monday, October 4, at 3 P. M., Room 27, Harvard University, Cambridge, to conduct a series of lectures in Clinical, Abnormal and Dynamic Psychology. Other lectures will follow on Wednesday and Friday afternoons.

The lectures will be based on the results of experimental investigations and it is the intention to make them, as far as possible, clinical in that the phenomena discussed will be demonstrated by experiment and presentation of actual cases. The subjects discussed will include the theories and phenomena discussed will be demonstrated by experiment and presentation of actual cases. The subjects discussed will include the theories and phenomena of memory; innate and acquired dispositions; hypnotism and suggestion; sleep; dreams; dissociation; automatisms; emotion; instincts and sentiments; motives and drives; the structure of human personality; the theory of subconscious (unconscious and co-conscious) processes; and the various phenomena (motor—sensory—intellectual) manifested by them as determined by experimental research (such as the so-called "automatic" writing, drawing, speech and purposive action; tactile, auditory, and visual perceptions and "crystal" visions; solution of problems; psychogalvanic reactions); the nature of subconscious activities; their demonstrated and theoretical influence in normal life and in abnormal mental conditions, methods of psychological analysis and investigation; the phenomena of emotion, conflict, repression and "meaning"; the resulting abnormal con-

ditions, such as amulsia, hysteria, obsessions, phobias, hallucinations, impulsions, fugues, multiple personalities and other psychoneuroses; and the principles and practice of psychotherapy. The lectures are open to medical students of the upper classes, postgraduate medical students and to the medical profession.

SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE

The next meeting of the Society for Experimental Biology and Medicine—Massachusetts Branch—will be held on Wednesday, October 13, 1926, at 4:30 P. M., in the amphitheatre of Building C, Harvard Medical School.

The program for the evening consists of the following papers:

1. The Veratrin Response of Functionally Isolated Muscle Fibres. By Frederick H. Pratt.
2. Certain Physics—Chemical Characteristics of Muscle Globulin. By William T. Salter, introduced by Edwin J. Cohn, chairman of the society.
3. The Behavior of the Capillaries of the Lungs under Different Conditions. By Joseph T. Wearn, Joseph B. Barr, and W. J. German of Harvard Medical.
4. Thyroid Secretion under Pseudaffective and Sympathetic Stimulation. By Walter B. Cannon and Sidney W. Britton of Harvard Medical.
5. Decerebrate Preparation (Maternal) for Direct Observation of Unanesthetized Mammalian Embryo with Some Observations on the Cerebral Circulation. By Frank Fremont-Smith, introduced by Stanley Cobb (by title).

The meeting promises to be one of the most popular meetings sponsored and conducted by the society at Harvard Medical School.

The meeting is open to all medical students and to any one connected with the medical profession or to any one interested in the general work of the society. Dr. Edwin J. Cohn, and Dr. Percy G. Stiles, both of the Physiology Department of Harvard Medical College, are chairman and secretary, respectively of the Massachusetts Branch of the society.

LECTURES ON "THE CARE OF THE PATIENT"

Beginning Monday, October 11, at 5 P. M., in Amphitheatre C, of Harvard Medical School, the first of a series of lectures will be given on "The Care of the Patient." Similar series of lectures have been given the past several years and have met with such approval as to warrant their continuance.

These lectures will discuss, from the viewpoint of clinicians in various lines of work, the care of the individual human subject, as against the care of the disease.

The schedule of lectures is as follows:

1. Monday, October 11—Dr. William S. Thayer.
2. Thursday, October 14—Dr. Franklin G. Balch.
3. Tuesday, October 19—Dr. C. Macfie Campbell.
4. Thursday, October 21—Dr. Francis W. Peabody.
5. Tuesday, October 26—Dr. Austen Fox Riggs.
6. Thursday, October 28—Dr. Alfred Worcester.

All members of the medical profession of Boston and vicinity are cordially invited to attend this series of lectures.

THE FIFTY-FIFTH ANNUAL MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION

The Boston City Health Department will be represented at the fifty-fifth annual meeting of the American Public Health Association, at Buffalo, October 11 to 14, by Dr. F. X. Mahoney, Health Commissioner, Professor J. O. Jordan, Dr. Charles F. Wilinsky, and Secretary Stephen L. Maloney. Health officers from all sections of this country, Canada, Cuba and Mexico will attend to discuss their specific problems and to learn newer and better ways of safeguarding the health of the public. It was this association that recently finished its health service survey of American cities, and which landed Boston at the top.

Health Administration and Education will be the subject for discussion at the big dinner session on Monday and a special session will be given over to the question of milk production and handling from the time of milking until the milk is delivered at the doorstep of the consumer. The healthiness of the herds and the cleanliness and immunity from disease of the milk handlers are phases of this subject. Experts will tell about the latest methods of sterilizing milk bottles and the treatment of milk by an electrical method. Dairy farm inspection will be included in these sessions on milk supply and control.

The relation of animal diseases to the health of the people is another vital topic for consideration. The rat, a carrier of plague, and the relation of bovine tuberculosis in cattle to the health of human beings come under this head.

The increased number of deaths from heart disease is another problem of increasing importance confronting health workers throughout the United States and other countries. Deaths from tuberculosis have decreased considerably within the last ten years, but deaths from heart disease have been on the upward curve. Men in various States who have been studying the heart disease problem will give the delegates at the Buffalo meeting the benefit of their conclusions.

Food handlers have been frequently discovered to be the carriers and transmitters of infectious diseases, therefore public health authorities are considering the necessity of demanding a physical examination of all food handlers. Health officers will hear of the latest progress that has been made along this line.

Closely connected with this subject is the cleanliness of soda fountains and the sanitary precautions taken by soda fountain proprietors. At this same session, the question of chlorination of soda fountain glassware and the sterilization of dishes used in public eating places will be taken up.

How cities are handling the communicable diseases and the practice of quarantine and isolation for such diseases as measles, whooping cough, diphtheria and scarlet fever will offer interesting comparisons.

There will be a session on child hygiene, covering the infant, the school child, and the handicapped child. School medical inspectors will take up the work of the school physician and nurse, outlining and criticising the present school health program.

Engineering experts will discuss the progress made in eliminating pollution from the Great Lakes and the St. Lawrence waterways. There will be a session on sewage disposal. Mental hygiene will also be given an important place on the general program.

Governor Alfred E. Smith of New York State will speak at the opening session. Other speakers will be: Professor C. E. A. Winslow, of Yale University, President of the association; Dr. Livingston Farrand, president of Cornell University; Professor Irving Fisher of Yale University; Dr. Louis I. Harris, Health Commissioner of New York City; Dr. Herman N. Bundesen, Health Commissioner of Chicago; Dr. Haven Emerson of Columbia University, formerly Health Commissioner of New York City; Dr. A. W. Freeman of Johns Hopkins University; Dr. J. F. Lopez-Silvero of the National Department of Health, Havana, Cuba; Dr. I. S. Falk, University of Chicago; Dr. Francis X. Mahoney, Health Commissioner of Boston; Dr. Louis I. Dublin, statistician of the Metropolitan Life Insurance Company; and Dr. John A. Amyot, Deputy Minister of Health, Ottawa, Canada.